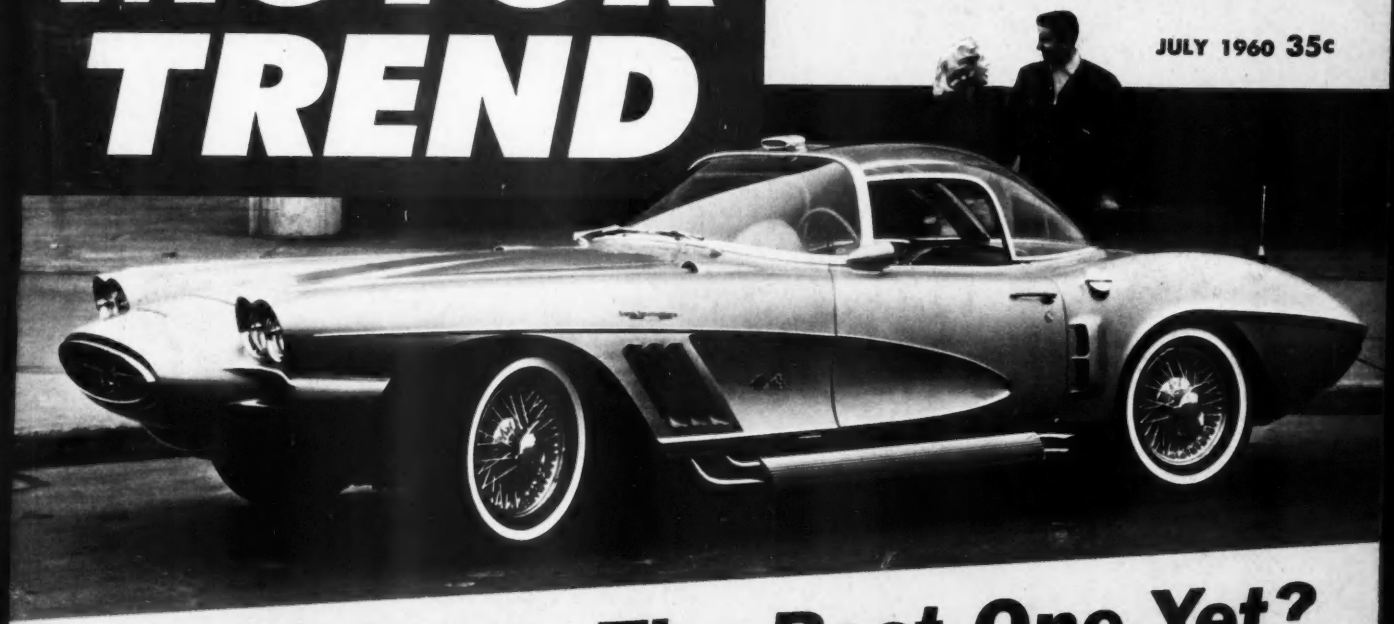
COMPARING THE LUXURY THREE

MOTOR TREND

"KNOW YOUR CAR"
A new pictorial series

JULY 1960 35c



CORVETTE—The Best One Yet?



GM's New Bubble-Top Bomb



PAST AND PRESENT: The famous 300 SL gullwing coupe and its improved replacement, the fabulous 300 SL Roadster.

GREAT GETAWAY CAR: **MERCEDES-BENZ**

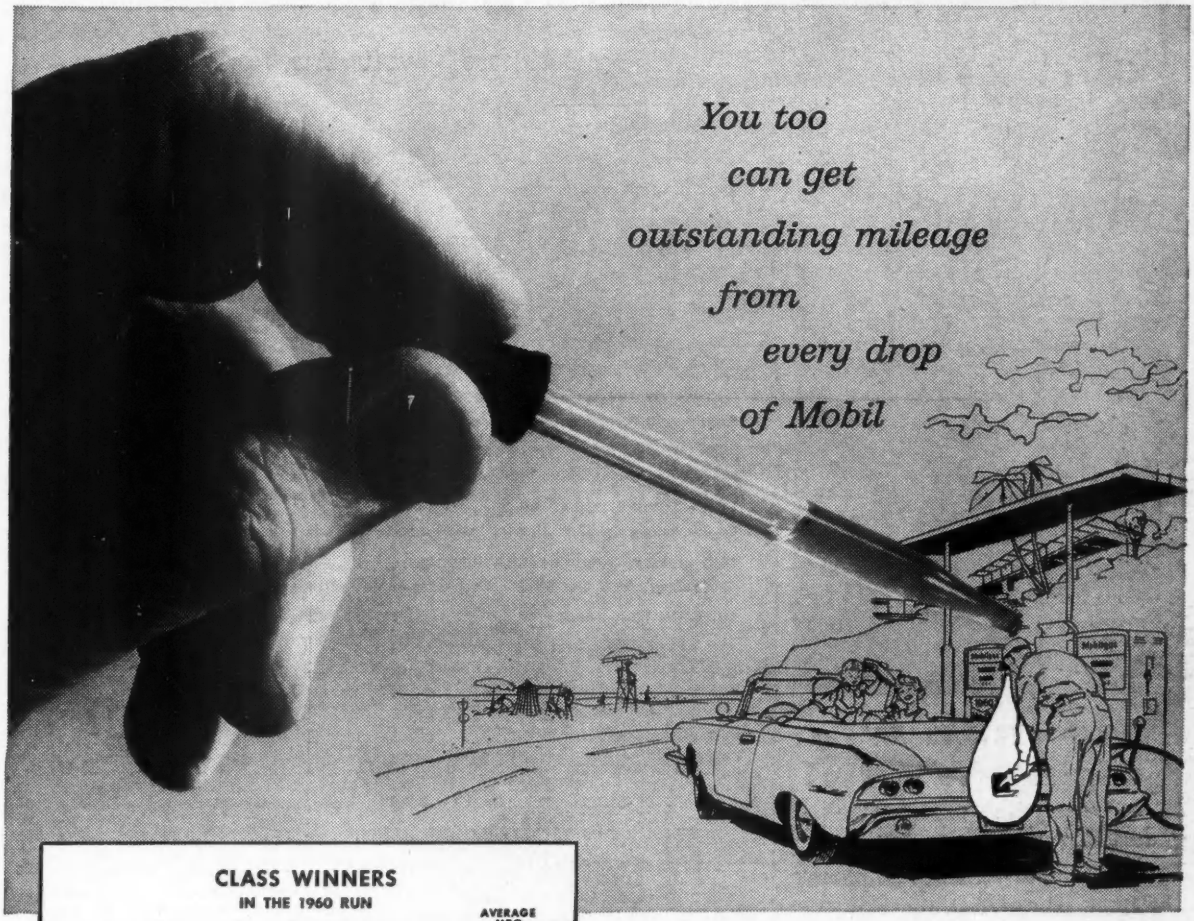
Escape to the great green world of spring and summer. Motor to the mountains, drive down to the sea. Slip the surly tethers of the working day and learn that how you go can often bring more satisfaction than where. Point the long potent snout of your Mercedes-Benz sports car down the highway and, as distance dissolves, thrill pridefully to the incomparable control you exercise over the machine. Shift down . . . fast. Corner! Watch the tach plummet then climb as you surge forward. Sense the superiority of this automobile as you become more and more a part of it, sensitive to the perfection of its moves and its indescribable subtlety. For this is the greatest motoring experience on earth . . . driving your own Mercedes-Benz. Can you think of a better means of getting away from it all?

Mercedes-Benz Sales, Inc. (A Subsidiary of Studebaker-Packard Corporation)

Sedans, convertibles, sports cars . . . prices range from about $3,300 to $13,000

European delivery can be arranged.

MOBILGAS ECONOMY RUN CARS AVERAGED 21.23 MILES PER GALLON



CLASS WINNERS
IN THE 1960 RUN

			AVERAGE MPG
Class A	Compact	RAMBLER AMER. CUSTOM	28.35
Class B	6 cyl. Low Price	PLYMOUTH	24.83
Class C	8 cyl. Low Price	PLYMOUTH	22.89
Class D	Low Medium Price	STUDEBAKER HAWK 8	22.99
Class E	Upper Medium Price	CHRYSLER NEW YORKER	20.87
Class F	High Price	IMPERIAL	20.50

OTHER MILEAGE MARKS

Buick Le Sabre 19.07 • Cadillac 18.82 • Chevrolet Biscayne 6 21.49 • Chevrolet Bel Air 8 20.42 • Corvair 27.03 • DeSoto Fireflite 21.01 • Dodge Dart 6 24.74 • Ford Falcon 25.64 • Ford Fairlane 6 22.48 • Ford Fairlane 8 21.58 • Mercury Monterey 21.07 • Oldsmobile 88 18.24 • Pontiac Catalina 19.73 • Studebaker Lark 8 23.28 • • Thunderbird 19.89 • Valiant 27.30 •

Run supervised and results verified by the United States Auto Club.

USAC

America's mileage economy classic provided unmatched proof of the miles-per-gallon leadership of Mobil, the New Car Gasoline. In the new compact cars, the low price sixes and eights, right on up to the biggest cars on the market—every drop of Mobil delivered outstanding mileage—AND under the same conditions you drive your car.

Now improved with the remarkable combination additive *Preptane*, Mobil offers you more power, pick-up and mileage economy in every drop. Get more miles out of every drop of gasoline you buy. Buy Mobil.

You're miles ahead with the NEW CAR Gasoline

Mobil

Automotive Research Library
★ PETERSEN PUBLISHING CO. ★



The man who didn't WYNN!

First he pushed his luck—didn't answer the danger signals—and now he has to push his car. Wynn's Engine Tune-Up is guaranteed to have freed his sticking hydraulic valve lifters and Wynn's Carburetor Cleaner would have cleaned his carburetor *right on the car.* MORAL: It's much better to be a Wynner than a pusher.



Available at service stations, garages, new car dealers and wherever automotive products are sold throughout the United States and every country of the free world.

WYNN OIL COMPANY, AZUSA, CALIFORNIA
Affiliated companies in: Toronto, Canada; St. Nicolas Waes, Belgium; Caracas, Venezuela

MOTOR TREND

JULY 1960 VOLUME 12, NO. 7

EDITORIAL MEMO 6

LETTERS 10

DETROIT NEWS AND RUMORS 16

GLOVE COMPARTMENT 18

IMPORTS ON THE WAY 20

'60 CORVETTE ROAD TEST 22
Improved chassis, brakes leaves little to be desired in handling qualities

XP-700—TOMORROW'S CORVETTE? 26
Here is a happy combination of "way-out" styling, functional innovations

SECRETS OF THE WINNINGEST CORVETTES 30
Shutting out European "name" speedsters—how it's done out West

PUSH OR PULL? 32
The various engine/drive combinations—their advantages and disadvantages

IF IT'S LUXURY YOU'RE AFTER 38
Choice among Cadillac, Lincoln, Imperial boils down to personal taste

TWO WESTERN-BRED FORMULA JUNIORS 42
"Pin-money" BMC and DKW Juniors are products of ingenuity and enthusiasm

SUITS-HIM-TO-A-T-BIRD 46

KNOW YOUR CAR—WHAT MAKES IT GO? 47
A series for those who've wondered "just what makes their car tick"

THE MOST SUPER PORSCHE OF THEM ALL 53

BIG BLAST FOR BONNEVILLE:

"BIRDCAGE JET" 54

MICKEY THOMPSON'S "CHALLENGER I" 58

ATHOL GRAHAM'S "CITY OF SALT LAKE" 59

1902 PIERCE MOTORETTE 60

GETTING MORE STOP! 62
Getting more "go" is only half the story—here's the other half

THE SMALL-SMALL CAR 64
Detroit, flushed with success of compacts, goes after VW, Renault market

CUSTOMIZED COMPACTS 67

HOP-UP KIT FOR RENAULT DAUPHINE 68

USE TESTS: HOLLEY DISTRIBUTOR, DAYTON POINTS 70

NEW PRODUCTS 72

SELL 'N' SWAP 76



COMING NEXT MONTH:

Exclusive—Details and photos of Corvair's Super Monza sports coupe

Don't sell the Sixes short—they're not compacts, but they're thrifty

Compacts with go-packs—engine-switching in the smaller cars

Indianapolis, 1960—full pictorial report on the cars and drivers of the fastest 500 yet

EDITORIAL DIRECTOR . . . . Wally Parks

MANAGING EDITOR . . . Erwin M. Rosen

TECHNICAL EDITOR . . . Charles E. Nerpel

DETROIT EDITOR . . . . . Don Stewart

EDITORIAL ASSISTANT . . . R. M. Yamazaki

ART DIRECTOR . . . . . Albert H. Isaacs

ART EDITOR . . . . . J. Bryce Gillespie

PHOTOGRAPHERS: CHIEF . . Robert D'Olivo
Al Palacy, Colin Creitz, Pat Brollier

OVERSEAS REPRESENTATIVES:
EUROPEAN EDITOR . . . . Gordon Wilkins
GERMANY—G. Molter; ITALY—J. Lurani;
ARGENTINA—R. Hansen, G. Gogliatti;
AUSTRALASIA—S. Simpson;
SCANDINAVIA—L. Johannson

CONTRIBUTING EDITORS:
CLASSICS . . . . . Robert J. Gottlieb
CUSTOMS . . . . . George Barris
RACING . . . . Sam Hanks, Les Nehamkin

PRODUCTION . . . . Y. Hull, M. Donnell

ADVERTISING:
DIRECTOR . . . . . A. M. Benedict
MANAGER . . . . . Jim Long
PRODUCTION . . Dick Jones, Mike Qualters

GENERAL MANAGER . . . . Lee O. Ryan
BUSINESS MANAGER . . . . T. A. Johnson
CIRCULATION MANAGER . . Gordon Behn

PUBLISHER . . . . . R. E. Petersen

Motor Trend, U.S. copyright 1960 by Petersen Publishing Co., 5959 Hollywood Blvd., Los Angeles 28. Phone HOllywood 6-2111. Second-class postage paid at Los Angeles, California, and at additional mailing offices. Published monthly.

Subscription Rate: $3.50 per year; 2 years $6.00. Above rates for U.S., its possessions, Canada; all other countries: one year—$4.50; 2 years—$8.00. Single copy 35c. On sale at newsstands throughout the country.

Change of Address: Three weeks' notice is required. When requesting a change, please name magazine and either furnish an address imprint from a recent issue, or state exactly how label is addressed. Change cannot be made without the old as well as the new address.

Advertising: Los Angeles office—5959 Hollywood Blvd., Los Angeles 28. **Detroit office**—3337 Book Bldg., Detroit 26. Phone WOodward 3-8245. **Chicago office**—360 N. Michigan Ave., Chicago 1. Phone FRanklin 2-6067. **Cleveland office**—834 Schofield Bldg., Cleveland 15. Phone MAin 1-1139. **Eastern office**—17 E. 48th St., New York 17. Phone PLaza 1-6690. **St. Louis office**—915 Olive St., St. Louis 1. Phone GArfield 1-5153. **San Francisco office**—155 Montgomery St., San Francisco 4. Phone EXbrook 7-5367. Closes 25th of 3rd month preceding publication. (See SRDS.)

Contributions: Should be mailed to 5959 Hollywood Blvd., Los Angeles 28. They must be accompanied by return postage and we assume no responsibility for loss or damage thereto. Any material accepted is subject to such revision as is necessary in our sole discretion to meet the requirements of this publication.
Printed in U.S.A. by Pacific Press Inc., Los Angeles.
Member Audit Bureau of Circulation

ON THE COVER:

A reflection from the crystal ball—the XP-700, GM's experimental sportscar which may be forerunner of future Corvettes. Radical appearance belies its practical, functional engineering.

COMPACT ECONOMY

You can get up to 30 miles to the gallon of regular gas with Opel. And this is no claim; it's a fact, proven thousands of times over by ordinary Opel owners. Speaking of economy, Opel replacement parts *really do* cost a lot less than those of conventional cars . . . an average of 35%. Opel trade-in value is high, too!



OPEL REKORD TWO-DOOR SEDAN

GERMAN PRECISION

Some compacts give you economy, some give you quality. Opel gives you both! Opel's careful workmanship stems from a policy of selling as many cars as it can build with precision—not building as many cars as it can sell. You'll notice the difference right away in the fit of the doors and richness of the upholstery.



OPEL REKORD TWO-DOOR SEDAN

$1987.50 EQUIPPED

The $1987.50* P.O.E. New York MANUFACTURER'S SUGGESTED RETAIL PRICE for the 2-door Rekord sedan includes heater-defroster, direction signals, clock, automatic trunk light, 2-speed electric windshield wipers, cigarette lighter and ash trays, front arm rests and dual sun visors. You don't have to add hundreds of dollars worth of accessories to Opel to get it into driving shape.

*(Including delivery, handling, Fed. excise taxes.) Transportation charges, state and local taxes, accessories and optional equipment including whitewall tires additional.

THIS IS SOLD AND SERVICED ALL OVER AMERICA BY

OPEL BUICK DEALERS

NOW ANY DRIVE'S A HOLIDAY!



GLIDE CONTROL, a new, automatic throttle control takes the footwork out of long drives because it holds any speed on fairly level roads with your foot off the gas! Not a governor. Here's all you do: Choose any speed, touch Glide Control* floor button "cutting in" unit. Now speed's set. (Set unit at legal limit and end speeding tickets!) Reset to compensate for hills or "cut it out" by touching your brake. Drive more comfortably with less chance of accidents. Installs on any car in minutes. Repays cost with gas savings up to 20%! (Based on user reports.) **See Glide Control demonstrated at service stations, garages, automobile dealers!** *Trade Mark

Awarded MOTOR TREND Seal of Approval

E-7

GLIDE CONTROL CORPORATION
1608 Centinela Avenue
Inglewood, California MT-7

Please rush full details on GLIDE CONTROL performance.

Name _____

Address _____

City _____ State _____

I am a: (check one)
☐ Private Car Owner ☐ Distributor ☐ Retailer

FLASHING PERFORMANCE FROM YOUR ★ **corvair**



OVER 60% INCREASE
IN PERFORMANCE

	STOCK	BLOWN
0-60	21.2 Sec.	7.4 Sec.
¼ Mile	22.2-61.3 MPH	15.76-85.76 MPH
Top	88 MPH	125 MPH
0-30	6 Sec.	2.5 Sec.
30-50	8.2 Sec.	3.9 Sec.
50-80	24 Sec.	9 Sec.

Fantastic but true —all compacts **$299.50** Includes 2 barrel carb & enclosure
Write for complete information

PAXTON PRODUCTS
929 Olympic Boulevard, Santa Monica, Calif.

An Editorial Memo

"The Vanishing Mechanic"

THE SIGNS OF A SOUND AUTOMOTIVE YEAR can be judged in various ways—by the optimism of manufacturers and dealers, by the interest of potential buyers, by the fever of enthusiasts. By all these standards, 1960 looks like a glowing picture of health.

Auto production and sales are considerably above last year, and talk of possible new records comes up regularly. The welcomed invasion of the compacts (with a second wave being readied) has regained for the automobile its honored place in everyday conversation. And red-blooded American boys and men are lifting up hoods, rolling up sleeves and learning "what makes 'em tick"—and how to make them tick faster. All in all, the automobile seems to be enjoying a renaissance as it enters the "successful '60s."

The current estimated 72 million cars and trucks on the nation's roads are steadily increasing as second-car suburbanites and wheel-worshipping teenagers make a car a necessary way of life. But this motoring mushroom, without a corresponding increase in trained service personnel, means that a higher percentage of these cars may not be operating at peak efficiency—or with maximum safety.

Fortunately, there has been a growing interest in preventive maintenance which, since 1952, has increased the auto upkeep industry by more than 30 per cent, figures the Good Car-Keeping Institute. Auto manufacturers estimate that this interest in preventive maintenance has increased the life expectancy of the average car to six years.

The desire to keep a car in optimum operating condition is heightened by knowledge of a car's basic components and systems, their functions and their limitations. MOTOR TREND hopes to help instill this desire in its readers with a new monthly pictorial feature, "Know Your Car" (first chapter starts on page 47). This illustrated series of articles is designed to acquaint readers with the fundamentals of automotive engineering design, and to further their understanding of some of the basic principles.

Though it provides a good groundwork, the "Know Your Car" series can present only the highlights of the subject . . . a primer course, if you will, for interested beginners, or those seeking a more simple and concise explanation.

The editors hope that this series in the coming months will introduce many car owners to a new field of helpful knowledge. We would hope that a number may be persuaded to read further into this field, and absorb what additional learning their time, interest and capacity permit.

We hope even more that a number of readers may become fascinated with the variety of engineering marvels—and challenges—that an automobile represents, and may wish to consider entering the field of auto mechanics. The need for skilled technicians is ever growing, and the more intricate automotive mechanisms introduced each year demand well trained (and well paid!) technical specialists.

Car manufacturers realize this only too clearly—and that's why they conduct special training centers to insure that their dealers and repair shops will have sufficient skilled personnel to provide satisfactory customer service.

For this same reason, specialist-training institutions like National Technical Schools of Los Angeles have been expanding their resident and home study programs to attract the thousands of young men who can foresee both the need and the opportunity for trained auto mechanics.

Another commendable attempt to encourage more young men to enter the auto industry is the annual Chrysler Corp. Trouble-Shooting Contest, which this year was held in 16 cities across the country. Participating vocational and high schools select two-man teams to compete in diagnosing and correcting the mechanical ills that have been previously placed in the test cars. Nearly 1000 students recently competed in the sixth yearly competition.

And so—even though the number of cars on the road threatens to increase faster than the number of repairmen under their hoods, there are forces at work trying to stem the tide of "the vanishing mechanic." We feel that MOTOR TREND's "Know Your Car" series can be one of them.

GET THE CAR



THAT'S GOT THE GOODS!



What kind of goods? Lots of room for a family of six, plus a vacation's-worth of luggage. Four-door wagons with loads of hauling space (72 cu. ft.). A rattle-proofed, rust-proofed and fully unitized body. Bump-shrugging Torsion-Aire suspension. A nickel-nursing *inclined* engine that makes every trip an economy run. An alternator electrical system that makes your battery last lots longer. Looks that make the low price tag even more surprising. That's the kind of goods Valiant's got. The more-for-your-money kind of goods you'd expect in any car made by Chrysler Corporation—compact or otherwise. Got it? Get it!

Valiant

KING OF THE COMPACTS

The Chrysler 300/F

An impressive demonstration of Chrysler Corporation engineering in one of the world's finest high-performance automobiles

The first Chrysler 300 was built as an experimental model with some of the most advanced ideas of Chrysler Corporation engineers. Professional test drivers were so impressed by the way it drove that Chrysler decided to make a few available.

This is not a car for the average motorist regardless of his means.

It is a car for the man who loves to drive and drives exceptionally well. For the mature, experienced driver who wants far more in the way of performance and handling than he can find in any production car no matter the price.

The 300F compares favorably with the most costly European Gran Turismo automobiles in its ability to maintain very high average speeds over any type of road—rough or smooth, flat or hilly, straight or twisted with hairpin curves.

But unlike cars designed primarily for competition, the Chrysler 300F is a comfortable, spacious car, quite distinctive in appearance and most luxurious in its appointments.

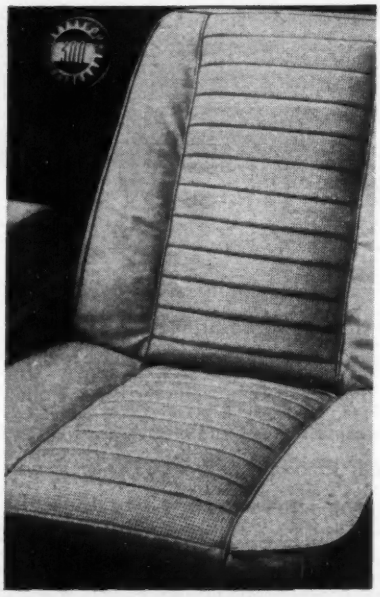
It is not unusual for one of these superb automobiles to cover 600 or 700 miles between morning and dusk. Owners report less fatigue after such trips than at the end of a trip of half that distance in other expensive cars.

300's have an impressive history of record-setting performance on some of the world's toughest courses, yet they handle with an ease and a sense of security unequalled in modern automobiles.

And remember, many of the features, the rugged quality, the ease of handling found in the 300F are engineered into every automobile made by Chrysler Corporation. Try the one that fits you best. Let a drive bring out the difference great engineering makes.



A tachometer shows engine rpm's to tell you when you approach or pass peak performance efficiency.

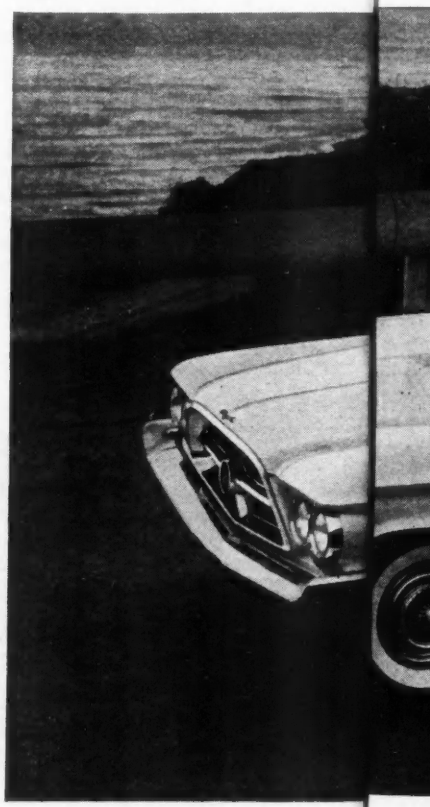


Bucket seat is designed to give comfortable support from shoulder to knee.



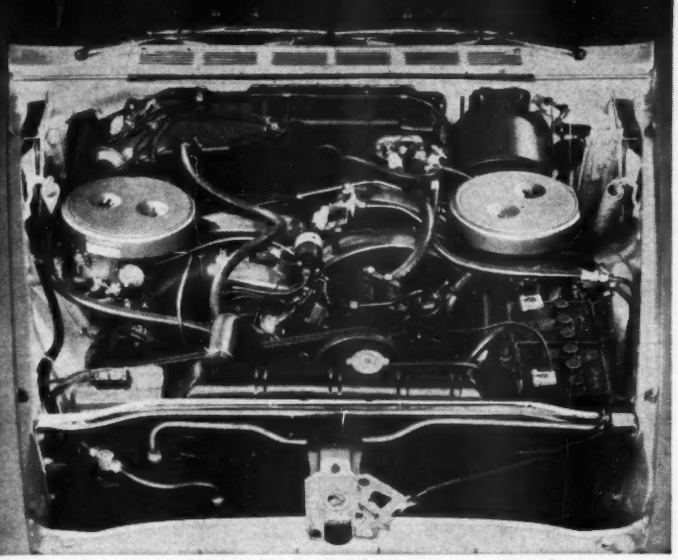
Individual bucket seats, front and rea upholstered in top grain porous leathe

Here' Ram



Basic specifications of engine-transmission system:

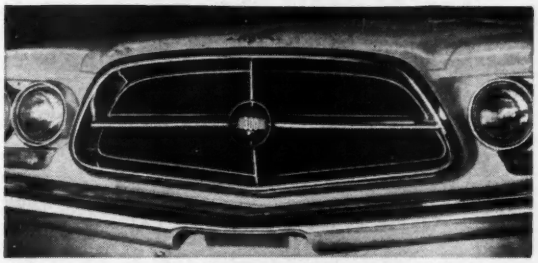
Piston displacement	413 cu. in.
Bore and stroke	4.18" x 3.75"
Compression ratio	10.1 to 1
Carburetor	2 with 4 barrels each
Horsepower	375 at 5000 rpm (400 at 5200 rpm with option 4-speed manual transmissio
Torque, lb-ft.	495 at 2800 rpm



Here's what gives this car its remarkable performance. 375-horsepower Ram Induction engine with twin 4-barrel carburetors.

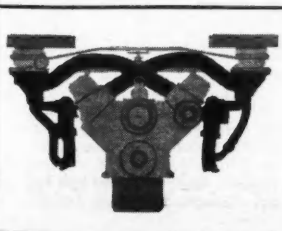


The 300F medallion is molded like a gear wheel to express the rugged spirit of the car.



The open grille gives the 300F a "Pure automobile" look.





Pure automobile...The Quick, the Strong, and the Quiet

CHRYSLER CORPORATION

VALIANT • PLYMOUTH • DODGE DART • DODGE • DE SOTO • CHRYSLER • IMPERIAL

NEW "100" SERIES ELECTRIC TACH!



New precise readings through highest engine speeds! Easy-to-read dial with black face, white numerals and pointer pin-points engine performance . . . for "speed" shifting . . . peak operating efficiency and economy.

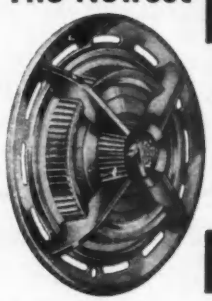
New standards for dependability...accuracy. New design eliminates pointer waver. There's no chance of over-run or pointer lag. You get precise readings that help prevent engine lugging. The result: lower maintenance costs and less power loss!

New, fast, do-it-yourself installation with deluxe top-of-dash, steering post or panel mounted models for 4, 6 and 8-cylinder engines; 6 and 12-volt battery ignition systems; 0-5000, 0-6000 and 0-8000 dial scales. Case size is $3\frac{11}{32}$ inches in diameter. Simple wiring connections mean quick, reliable do-it-yourself installation.

For details see your Stewart-Warner Dealer or write:

Symbol of SW Excellence
INSTRUMENT DIVISION
STEWART-WARNER CORPORATION
Dept. AL-70, 1840 Diversey Pkwy., Chicago, Ill.

The Newest ...but



ask to see the complete line of NATIONAL Wheel Covers at your favorite auto accessories store.

NATIONAL
NAMSCO, INC., Bellwood, Ill.



JUST WHAT THE DOCTOR ORDERED!

Editor:

In regard to your story in the May issue about the Plymouth XNR car, I think this is just what the doctor ordered to cure this Corvettitis epidemic that's going around.



If Plymouth produced a sportscar identical to or resembling their XNR and powered it with one of those hairy ram-inducted 383-cubic-inch Fury powerplants, I am most certain it could very easily polish off a Corvette any way you would want to run them. The Plymouth already has handling characteristics to match those of the Corvette, which would compensate for its heavier engine. With their new slant six available besides a ram-inducted V8, they would have a lot more flexibility in the racing field than the Corvette.

I for one strongly urge Plymouth to put it into production.

Deadwood W. Moore — La Follette, Tenn.

BASIC PHYSICS

Dear Sir:

The article entitled "The Driver Walked Away" (May MT) is a reasonably well written essay, but the author is badly in need of a basic physics course.

To measure the damage done to a person in a crash, one should consider his kinetic energy at the time of the collision—not his momentum. A dashboard is a relatively rigid body and hence there is not too much significance to the momentum transferred. A consideration of his energy loss is far more appropriate.

Warren Sewall — Massachusetts Institute of Technology

A DISBELIEVER STILL

Gentlemen:

From the remarks made by Roy T. Hurley, Curtiss-Wright president, at the stockholders' meeting, before the year is out they will be in production on the Wankel engine. After these engines are on the market and proven 100 per cent, a letter of humble apology from this disbeliever will be sent to Mr. Hurley.

The more I bore into the details of the engine as covered in your articles, the more convinced I am that you won't see this Wankel engine as described in your magazine in American automobiles. In my opinion the rotating combustion engine is not a practical, workable design. If Mr. Gordon Wilkins drove a car purporting to have this engine in it (May MT) my guess is that it wasn't the one described in your March article—that is, a rotating internal combustion engine—rather probably a turbine powerplant.

J. R. Harman — Grand Rapids, Mich.

IT'S A GREAT COUNTRY!

Dear Sir:

I think American cars offer the buyer a better bargain than any foreign car. Where else can you buy a '52 Studebaker V8 that runs well for $100, or a '50 Stude convertible for $40?

This is a great country!

Frank W. Honey — Chicago

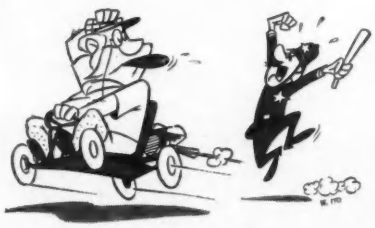
KARTING IN ENGLAND

Dear Sir:

In your karting story (April MT) you published reports on karting overseas, including one from Gordon Wilkins in England, to the effect that karting was in its early stages. Also, that the karts would be mainly in kit form.

This is rather misleading, because there are at least 25 companies making karts at this moment—and not in kit form either. Stirling Moss, himself, has an interest in one such company.

It is hard to estimate the number of karts in England, but it must be in the neighborhood of 300 to 400. About 20 karting clubs have been formed, and a national karting magazine is already in publication. Karting meetings are being held at the rate of about 15 to 20 a month.



The average price of a complete kart is $180 to $300. Engines used are mainly Villiers motorcycle engines.

Not so bad for a sport in its early stages!

J. King — London, England

WHAT'S THIS ABOUT HIGHER PRICES?

Dear Sir:

Three years ago, in 1957, I bought a new Chevrolet Bel Air four-door hardtop with power steering, power brakes, push-button radio, heater, Turbo-Fire 183-cubic-inch V8 engine and Powerglide for $2700. The quality was perfect, and the car was very lenient on gas.

I have ordered a new 1960 Chevy Impala four-door hardtop with power steering, power brakes, pushbutton radio, heater, Turbo-Fire 230-cubic-inch V8 engine, Powerglide, padded dash, rear seat speaker and windshield washers. The new Impala will cost me $2675.

continued on page 12

STOPS GAS WASTE, SAFEGUARDS PERFORMANCE!

THIS IS



MILEAGE MINDER

This is what Mileage Minder does for you!...

Ends gas waste, stops flooding by stabilizing flow of fuel at a smooth, steady level. Eliminates wasteful fuel surges, but never reduces pressure nor restricts flow. You get *maximum* fuel economy wherever, however you drive.

Protects high-efficiency performance of modern cars. Twice cleaned fuel can't foul carburetor. Stabilized fuel flow smooths out idling, eliminates stalling.

Filters fuel *completely*, positively—without chance of hazardous clogging. Exclusive Trouble Trap cleanses fuel magnetically of metallic impurities. Self-flushing filter (found only in Mileage Minder) never needs replacing. No more clogging, no more costly replacements!

Minimizes chance of vapor lock. Catches gas vapor in vapor dome, condenses it, then passes it on harmlessly as liquid fuel.

● ***See yourself how Mileage Minder stops gas waste, safeguards performance. Satisfaction guaranteed. Get Mileage Minder now from your car dealer or auto store—or as part of your next engine tune-up.***

Model MM-200
6.95
Fittings Included



MM-200 Mileage Minder—Compact, metal bowl model. Ideal for cramped auto installations—and marine, truck and industrial use. **$7.95**

Write for free descriptive folder PADER MANUFACTURING CO. • 311 TURK ST. • SAN FRANCISCO 2, CALIF.



BRAKE EQUALIZER IMPROVES BRAKE PERFORMANCE

Do-Mor Brake Equalizer, used on police cars for maximum braking efficiency and control, maintains constant fluid pressure on all wheels resulting in even, completely controlled stopping action of the car.

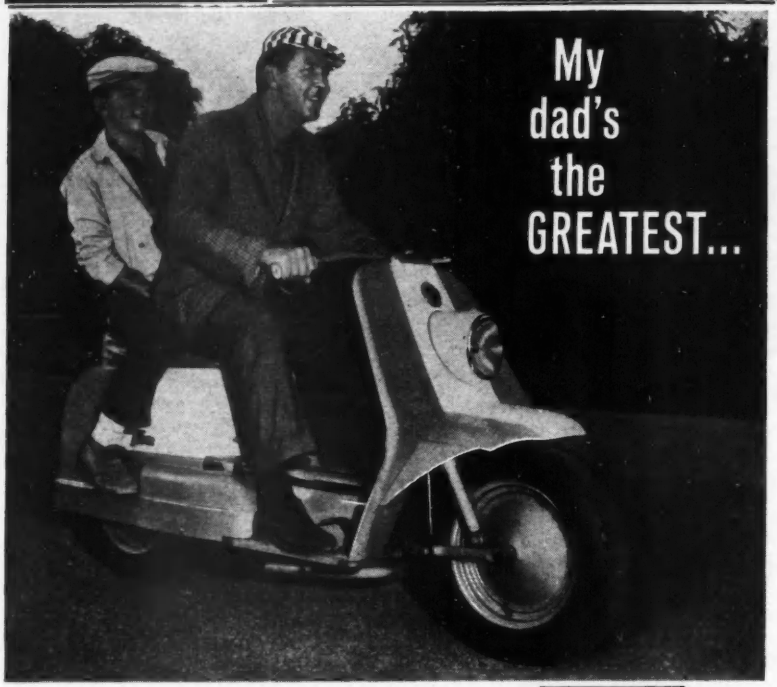


- Eliminates dangerous front wheel locking & stops uncontrollable skidding
- Insures safer, straighter stops
- Reduces stopping distance
- Reduces lining wear and tire wear
- Reduces costly brake repairs
- Easily installed on all cars, *regular* or *power* brakes
- Write for free literature

NOW—ONLY $9.95 Money-back guarantee

Send only $2.50 and pay balance plus small C.O.D. charge upon delivery, or send $9.95 and save C.O.D. and shipping charges. Specify make and year of car.

DO-MOR
Brake Engineering Company
P.O. Box 266, Orange, California



and so is my new HARLEY-DAVIDSON TOPPER

Like father, like son... happy with the new Topper.

What a ride — gentle as a billowy summer cloud... with dual suspension and large foam rubber saddle. Dependability — plenty of get-up-and-go. Automatic *Scoot-away* transmission—no shifting or clutching needed.

Dad is sold on safety features like the large diameter wheels and sure-stop front and rear drum brakes. Tells everyone about Topper economy — up to 100 miles to the gallon.

Mom's a Topper fan, too! She likes its good looks: sharp, clean lines molded in tough beautiful fiberglass... two-tone color styling ...chrome-plated instrument panel.

See your Harley-Davidson dealer. He will arrange a fun-filled demonstration ride. Or send in the coupon for literature.

HARLEY-DAVIDSON MOTOR CO.
Dept. MT, Milwaukee 1, Wisconsin

Send me more information on the Harley-Davidson Topper

Name.....Age.....

Address.....

.....

Letters

continued

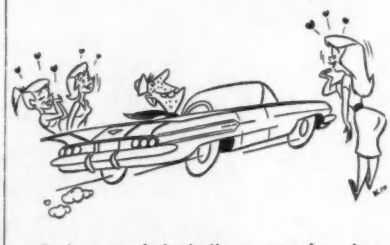
This is an example of the "prices too high and going up" complaint of my fellow readers?

L. Berman — Youngstown, Ohio

"DATE BAIT"

Gentlemen:

Your article "Is Your Car Date Bait?" (May MT) was very interesting and has set forth many basic truths which many of us have realized for a long time.



It is a psychologically proven fact that girls are attracted to fancy cars and uniforms of various sorts. Therefore, a pimply faced sailor in an Impala convertible represents glamor at its ultimate, while a college graduate in a '48 Hudson is just a "bum" and is treated with indifference.

What has happened to our values? The young women of America have the wrong sense of values, in my opinion. What is their goal? It is to "latch on" to the young man with the most appealing car and to make their friends jealous in the process.

As a consequence, the young man must remain eternally in debt in order to cater to the young woman's whims. A beautiful car is his greatest attractive force—and he knows it!

Robert G. Harlacker — Annville, Pa.

Dear Sir:

While the following is not original, we feel that it sums up the horrible truth about "Date Bait."

RULES FOR SOCIAL SUCCESS

1. Have a car.
2. Be a pleasant conversationalist.
3. Have a car.
4. Be congenial.
5. Have a car.
6. Be a good listener.
7. Have a car.

(Numbers 2, 4 and 6 may be omitted if the car is a convertible.)

Bill Cory — The Loomis School
John Maury — Windsor, Conn.

THANK GOD FOR THE INDEPENDENTS!

Editor:

News comes from one member of the "Big Three" that a slant six with long intake manifolds is the latest in engines. The carburetor sits some umpteen feet from the engine. Three years ago, this same firm advertised that intake manifolds made so that many carburetors could sit *close to* the engine were best! Eight years ago they told us the dome-shape combustion chamber was the finest, now (quietly) they've gone back to the "wedge."

Another member of the Big Three couldn't crow loud enough five years ago about the wrap-around windshield—now they quietly admit it was a hazard and have eliminated all but a slight curve.

The same can be said about many Big Three brag-abouts: air suspension, 14-inch wheels, massive, long wheelbases (to quote one company's president: "Who wants a small car?"). One member of the group has "discovered" four-wheel independent suspension and tags this thrown-together toy its "prestige" car! Meanwhile, the rest of their divisions share the same body with different grilles and rear fins—all, incidentally, taking on the look of a whale on ice skates!

Once again, thank God for the so-called "independent" makes!

G. F. Reynolds — Denver, Colo.

"WAY OUT, MAN"!

Editor:

Detroit's space-age styling is topped only by its use of "far-out" monikers. For instance—Mercury's "Comet," Ford's "Starliner," "Interceptor" engine, "Galaxie," Pontiac's "Star Chief," Oldsmobile's "Rocket" engine, Buick's "Electra" and Chevy's "Corvair" sound like the names of airplanes. Then there are the birds: "Lark," "Golden Hawk," "Falcon" and "Thunderbird."

To me, the most down-to-earth is the "Dart," if you get the point!

Richard Wieland — No. Brunswick, N.J.

NOT SO USEFUL

Dear Sir:

I would like to complain to the Detroit automobile manufacturers for overemphasizing the usefulness of their station wagons.

The wagons are stylish and comfortable, but their low floor-to-ceiling height of only 27 inches makes loading heavy objects a chore, and bulky objects are impossible to load. I have attempted to load a power mower and other gardening tools into a wagon. After hours of struggle loading and unloading, I gave up.



I would like to suggest that Detroit completely redesign the station wagon from the ground up—starting with a new body, heavier springs and shocks, four-speed transmission and heavier clutch. I believe station wagon users are entitled to a useful vehicle in addition to lavish chrome, gadgets and style.

James Tabata — Cleveland, Ohio

SEAT BELT TESTIMONIAL

Dear Sir:

In June, 1958 I rolled and flipped a Triumph TR-3 five or six times. When it was all over, everything in the car that was not tied down was scattered along the highway. I even lost the glasses which I was wearing.

The safety belt was the only thing that kept me from being thrown out and probably killed. I got out with minor cuts on my face and arm.

Charles H. Russell, Jr. — Jackson, Miss.

Why use Micro-Lube anyway?

We frequently hear this question from motorists and service station operators who aren't familiar with our product. Sometimes they'll say, "I use the best grade of gasoline and oil — why should I add Micro-Lube, too?" *Certainly* quality gas and oil are necessary for maximum engine performance. But they can't do the job *alone*. If they did, you'd never have a clogged gas line, never need an oil change. That's where Micro-Lube comes in.

Micro-Lube is a patented formula which offers you engine protection as *no other product can*. It contains an ingredient called *Cyclohexanone*, one of the greatest automotive discoveries. One pint of Micro-Lube in your crankcase every 1000 miles dissolves harmful deposits, eliminates varnish, reduces friction, protects your engine against wear. One 4 oz. can for each tank full of gasoline cleans fuel lines, eliminates moisture for quick, smooth starting, extra power. Micro-Lube contains no acid-producing ingredients.

Proof? Just drop us a line and we'll send you plenty! Or better still, you can send $2 cash, check or money order for a sample one-pint can and 4-oz. can, postpaid . . . and find out for yourself. Send the name of your service station or garage operator, too, so we can tell him you asked about Micro-Lube . . . and we have a small bonus for him.

Send to MICRO-LUBE
8505 DIRECTORS ROW
DALLAS 7, TEXAS



MICRO-LUBE

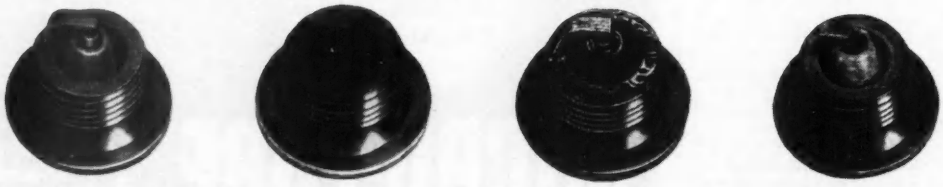
IF IT HAS AN ENGINE . . .
IT NEEDS MICRO-LUBE!

To learn what's going on in your engine—



Many times a day, in the weeks before the Indianapolis "500," the "Cut Clean" sign tells a practicing driver to cut off ignition and coast in for a spark plug check that will play a vital part in fine-tuning his powerful engine. It's a busy time for Champion Racing Engineers, as they assist in the careful analysis of hundreds of Champion spark plug firing ends.

What these spark plug firing ends can tell you



1. NORMAL — Slight brown to grayish tan deposits mean spark plug heat range and other conditions are correct.

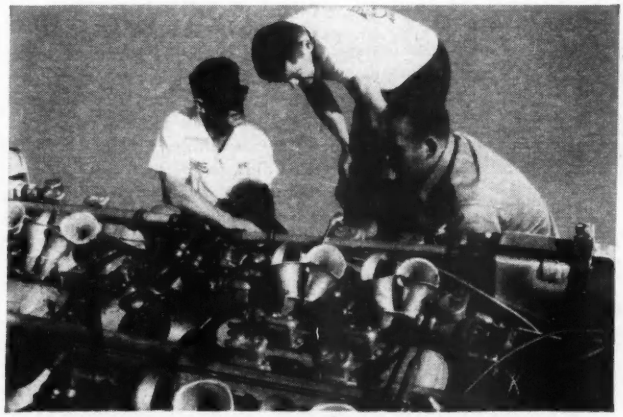
2. CARBON FOULED—Dry, sooty black deposits. If heat range is correct, may be caused by sticking choke, carburetor float level too high, clogged air cleaner, faulty breaker points, or weak coil or condenser.

3. OIL FOULED — Wet, oily deposits. May be caused by oil pumping past worn rings (if engine is past break-in period), porous vacuum booster pump diaphragm, or excessive valve-stem guide clearances.

4. OVERHEATED — Insulator may be white, with all deposits burned away, or may appear "blistered." If heat range is correct, may be due to excessive knocking, ignition too far advanced, cooling system stoppages, sticking valves, or too-lean air/fuel mixture.

"CUT CLEAN"

It's a "trick of the trade" of engine experts at Indianapolis. Here's why this special spark plug check can tell you more about your engine than a thermometer can tell a doctor about your health...



At Bonneville, Mickey Thompson, America's fastest driver (center), discusses spark plug readings with Champion Racing Engineer Dick Jones (left) and Chief Mechanic Fritz Voigt. Thompson even had his 32 Champions checked between the two laps of his record run. (Everything was OK, and no changes were made.)



Also at Bonneville, Champion Racing Engineer Jones worked with the crew of the Champion-sparked Austin-Healey Sprite that set 15 World's Records for endurance and speed. Here again, spark plug readings played an important part in properly tuning the engine.

It's mid-May at the Indianapolis Speedway. Pre-race activity is in full swing. In the pits, a mechanic chalks "CUT CLEAN" on a blackboard, holds it high. As his driver flashes by, he signals that he's seen the message. He runs one more lap. As the driver comes into the homestretch, he puts his foot in it. He holds his engine under full load for a few seconds, then suddenly cuts off the ignition and coasts into the pits.

He has "cut clean." Mechanics pull the spark plugs and carefully examine the firing ends. They are looking for "signs" put there under conditions of full power and peak temperatures.

The spark plug's firing end is the meeting place of fuel, fire, temperature and pressure. It can tell the trained eye many things—about fuel blends, spark advance settings, and gear ratios.

Once the proper spark plug heat range has been determined, also by a study of the plugs after a "cut clean" run, it is possible to read from the spark plug tips the effects that other changes have on combustion chamber temperatures. Advancing the spark just a bit more, for example, might raise temperatures to an unsafe high.

You can easily learn to make some basic deductions about your engine, by studying the accompanying photos and captions that explain some typical indications you might find on your spark plugs. (If you use your car for ordinary driving rather than competition, simply check your plugs after "average" driving. No special run is needed.) As you can see from these pictures, a spark plug check is a simple and effective engine check. That's why it's a good idea to check your plugs at regular intervals.

DEPENDABLE

CHAMPION

SPARK PLUGS



CHAMPION SPARK PLUG COMPANY • TOLEDO 1, OHIO



by Don Stewart

AS THE 1961 MODEL announcement draws near, the engines, drivelines and mechanical components of next year's cars appear to be the big newsmaker items in Detroit — instead of the finny, flaring sheetmetal that will surround them.

FROM PONTIAC comes confirmation on the new four-cylinder engine that will power that make's new small car entry, the "Tempest." There has been a popular misconception about this engine. Much has been said and written about it being a "half-eight" *or* one bank of a V8 389-cubic-inch Pontiac engine. Some early reports even went so far as to describe it as a four-banger that was merely "sawed off" a V8 on the drawing board.

Obviously, this isn't true! It does displace 195 cubic inches, which happens to be only ½-inch less than what half of the vee unit would be, and it will share some components with the larger V8. But, the entire design concept is new—and quite unique, too. Coupled to a flexible driveshaft, trans-axle and independent rear suspension, this strong little four could well become the compact performance champ.

OVER IN THE CHRYSLER CAMP, engines are receiving a lot of attention, too, with the announcement that that corporation has released for production its new aluminum version of the slanted six. This is not to be an "all-aluminum" engine in that only the cylinder block will be cast from the new lighter alloy. The head will remain cast iron as on the 1960 version that currently powers the Valiant (170 cubic inches) and the Plymouth-Dart (225 cubic inches). Chrysler engineers do hope, though, to have an aluminum head ready before the end of the 1961 model year. The 225-cubic-inch version, by the way, will power the new Dodge "Lancer" small car, due to bow in with the 1961 models.

ALSO FROM CHRYSLER comes word that a new, lightweight gas turbine is out of the development stage. "Outstanding progress" is reported with an end result that has 80 per cent fewer moving parts than a conventional auto engine. It weighs 450 pounds, compared with 600 pounds for a reciprocating engine that offers similar horsepower (140); gives "excellent" fuel economy; is quiet and provides engine braking comparable to conventional engines.

Dubbed a "third generation" turbine, Chrysler's latest step in this area follows on the heels of two earlier announced attempts. The first major breakthrough for Chrysler turbines came back in 1956 when a successful cross-country trip was made in a turbine-powered Plymouth sedan. In December, 1958 another Plymouth sedan powered by a 200-hp version of the earlier engine was put on the road for a 576-mile highway jaunt, achieving 19.4 mpg on a wide variety of different fuels. The latest unit, according to sources close to the corporation, has not been installed in a vehicle destined for such a trial but, from all reports, a field test is now in the planning stage.

OUT IN DEARBORN, where the Fords go by, powerplants are also running first in the fact-and-fiction department. The new 104-cubic-inch V4 that's being readied for the front-drive "Mini-Ford" has reached the preliminary tooling stage. There's also been a great deal of activity in the engine engineering departments where two other new units—a V6 of Falcon proportion (144 cubic inches) and a new V8 (of about 182 cubic inches)—are under way.

The V6 is apparently destined for the 1962 Falcon and the V8 for that year's Comet. For next year there's a 170-cubic-inch version of the pushrod six coming for the Mercury-like small car, but so far no plans for increased "go" in the Falcon have been resolved. Those power kits for the Falcon (that various speed shops developed for Ford units at Daytona) are once again under consideration as a factory-produced option.

There's also a lot of speculation about the new Ford 390-cubic-inch V8 that will be offered as a performance option for 1961. This solid-lifter powerplant is expected to be advertised as delivering 390 hp—a tongue-in-cheek figure at best!

1961 Buick?



Based on the latest available information, these drawings indicate the basic lines next year's Buick will follow. The side sculpturing resembles this year's Falcon, and the overall styling of the roofline is reminiscent of Ford/Thunderbird.

Ford's New Small Car?

AMONG THE MANY RUMORS about the "diminutive darling from Dearborn" is the sobering question: "Why does Ford want a smaller car—when its Falcon is doing so well?" (It's the industry's third best selling line, and production has been stepped up to an annual rate of 600,000 units!)

One of the most logical answers seems to be: "Not to compete with the Falcon, but as a possible new model for the Taunus, to try to snatch some of the sales from Renault and Volkswagen."

Below are drawings of what the car could very well look like, based on composite rumors and educated guesses. Basically it is a cross between a Falcon in the front and a flat-back-light Anglia in the rear. It is generally agreed among prophets that it will have front-wheel drive. Test cars are now being run under Saab bodies —several in Michigan and two reportedly at the Arizona Proving Grounds.

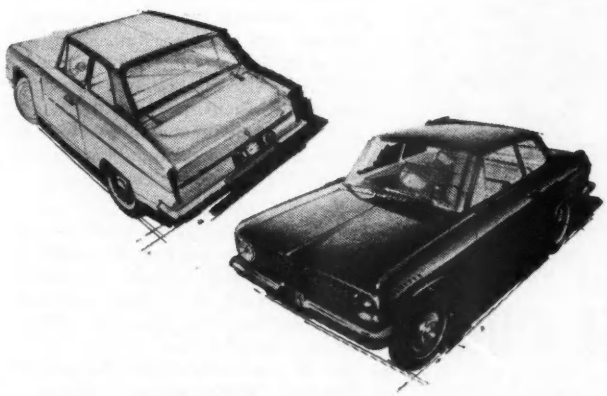
Several different engines have been tried, including an opposed four, an in-line four and two different V4s (now receiving the most study). The first was a narrow-angle job—a 20-degree vee with staggered cylinders. The angle is so narrow, it looks like an in-line engine at casual glance. Another, slightly wider-angle V4 with a 30-degree vee is now undergoing tests. All these engines have been between 100 and 105 cubic inches, with the V4s displacing 104.

The V4s have two unique design characteristics: they are water-cooled, but were built originally without conventional cooling fans up front of the engine. In fact, there isn't a pulley of any description at the engine's front. In addition, they have a unique valve-actuating system which is supposed to maintain zero backlash without using hydraulic lifters. The rocker arm apparently rides on a cam-shaped affair which is lightly spring-loaded. This valve arrangement is a hoped-for production item for all Ford engines for 1961 models, although one source reports they're having troubles with it.

Cooling the V4s is giving the engine boys some trouble, too. The engines ran far too hot without fans. First a thermostatically controlled electric fan was tried. This worked fairly well, but it costs too much and pulls quite a bit of current. So—believe it or not—they designed a longer camshaft and stuck a fan on the end of it! That's the engine that's undergoing test runs right now.

At least three types of suspension are being considered: coil springs in front and semi-elliptics in the rear; coil springs all around; and independent rear suspension, using coil springs and A-frames.

Both three- and four-speed transmissions are being tried—with the four-speed a possible option. No automatic transmission is indicated.



Front engine, front-wheel drive will give the small-small Ford lots of flat floor space and adequate headroom for four adults. Short overhang on 96-inch wheelbase and a target weight of 1650 lbs. will emphasize compactness, economy.



"Trans-axles will appear in several Detroit makes for 1961."
FALSE—Only scheduled trans-axle unit thus far confirmed is the one for the forthcoming Pontiac "Tempest" compact car. However, most divisions of General Motors will offer such a driveline component arrangement in 1962.

"Transistor ignition systems will bow in as an option this fall."
FALSE—A major breakthrough is about to be announced in this field, however, and quite likely one of the Big Three will offer such a system on its 1962 models.

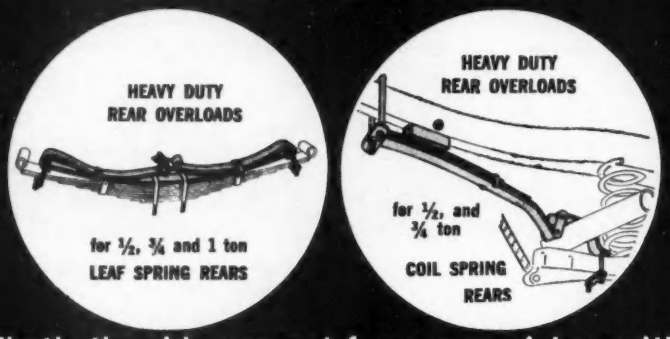
"The Valiant 'Hy-Per-Pack' performance option will go into production in July."
TRUE—A decision to drop this option was reversed recently and plans now call for units to be made available through Chrysler's MoPar parts organization. This is the power kit first displayed on the winning Valiant team at Daytona in February of this year. It will include high compression pistons, re-ground cam and ram induction manifold with four-barrel Carter carb. No price has been announced.

"New power is slated for '61 Comet."
QUITE LIKELY—A great deal of time has been spent by Ford Engineering recently to develop the Falcon-based Comet powerplant. Plans at present call for more displacement (through stroking), improved induction components and slightly higher compression ratio.

"Studebaker is planning to drop the 'Hawk' series."
POSSIBLE—Continued rumors out of South Bend would seem to confirm such a move. With such conjecture also comes the report that a "mini-Lark," similar in size to the projected Ford small-small car, is also being considered for 1962.

"More applications for Chrysler 'electroluminescent' lighting are planned."
QUITE LIKELY—First introduced as a source for dash instrument lighting in 1960, this unique illuminating technique may find itself woven into trunk lining material, glove box interiors and underhood splash shields.

SAFE and STABLE
with 1960 - NEW COMFORT!



That's the ride you get from your pickup with
HELLWIG ADJUSTABLE OVERLOAD SPRINGS

These Heavy Duty Rear Overloads are designed to carry maximum loads — as much weight as it is safe to carry on the standard tires — without sacrificing ride comfort. Adjustable for varying load factors, the Hellwig Overloads provide the extra margin of safety and performance in your Camper, trailer or conventional truck usage.

EASILY INSTALLED . . . NO WELDING, NO HOLES TO DRILL, NO ALTERATIONS TO FRAME . . . COMPLETE, CLEAR INSTRUCTIONS WITH EVERY UNIT.

Ask your dealer for the model to best serve your need, or write direct to factory.

DISTRIBUTORS: WRITE FOR FULL INFORMATION ON THE HELLWIG LINE.

HELLWIG PRODUCTS COMPANY, INC.

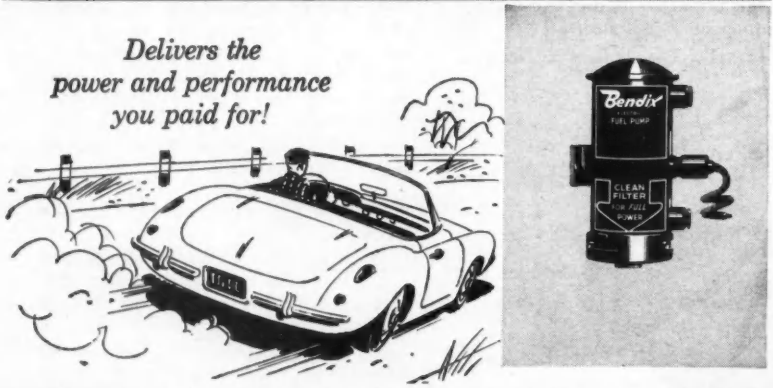
6231 SAN FERNANDO ROAD, GLENDALE 1, CALIFORNIA • CHapman 5-3530

EXCLUSIVE FROM THE AUGUST ISSUE OF HOT ROD MAGAZINE ON SALE JULY 21

RAY BROCK'S SPECIAL REPORT FROM INDY

Ray brings his HOT ROD readers his special fully illustrated, on-the-spot report on the running of the 1960 Indianapolis 500 . . . with all the thrills and excitement of the front runners plus an exclusive report of behind the scenes activity in the pits.

Delivers the power and performance you paid for!



BENDIX* ELECTRIC FUEL PUMP

*Reg. U. S. Pat. Off.

- Maximum fuel delivery instantly!
- More horsepower!
- No vapor lock!
- No fuel flow pulsation!
- Faster starts in cold weather!
- Buy from your dealer—install it yourself!

Bendix-Elmira
Eclipse Machine Division • Elmira, New York

THE Bendix CORPORATION



TARGA FLORIO WINNER for the third time, Porsche took top honors in the tough 450-mile race when Joakim Bonnier and Hans Herrmann in a Spyder RS-60 led the 28 cars which finished from a starting field of 70. The victory, after 7 hours and 34 minutes at an average speed over the 700-curve course of 59.1 mph, gained Porsche a 20-point lead in the Sportscar World Championship. Driving a 3-liter Ferrari, Trips and Hill were 2nd. Porsche also won 3rd, 5th, 6th and 8th overall positions, and placed 1st in the 1600 and 2000cc classes, and 2600cc GT class.

WATCHING THE FORDS GO BY will be a simple task for the residents of Flora, Ill. the week of September 12th. The Ford Motor Co. in a pre-introduction '61 model test will replace every car and truck (more than 1000) in the 5000-inhabitant community with a new Ford vehicle. Flora, 100 miles east of St. Louis, was selected because it is the city closest to the present population center of the U.S.

"THE CHANGING FACE of Driving in Eastern Europe" is the title of a special bulletin available to persons yearning to tour behind the Iron Curtain. Information includes points of entry, visa details, road conditions, fuel costs, hotel rates and classes, etc. for Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Rumania and Russia. With improved tourist facilities and lowered restrictions, 1960 is expected to be the biggest postwar year for auto travel on the Continent. Free copies of the bulletin may be obtained by writing Auto-Europe, Inc., 25 W. 58th St., New York 19.

TIRE TESTING is one of the major expense items for rubber companies. Goodyear spends an average of $2.5 million annually, runs up 16.5 million tire-miles in the laboratory and more than 58 million on turnpikes and test tracks.

B. F. Goodrich is building a nine-mile-long, 24-foot-wide, two-lane test track at Pecos, Tex. for prolonged high-speed performance studies—up to 150 mph. The track's clock-around schedule throughout the year will permit more than 15 million vehicle-miles of safety testing at higher-than-legal speeds.

TWO RACING AWARDS were bestowed upon Micro-Lube at the fourth annual USAC awards banquet, at which Rodger Ward received the national championship title. Micro-Lube was honored for the winning car in the 1959 national road racing championship (the 4.5 Maserati *Micro-Lube Special*), and for having the nation's number two driver in road standings, Lloyd Ruby—who will be driving a 2.8 Birdcage Maser for the additive firm in most of the remaining 1960 USAC road races.

"A KALEIDOSCOPE of a year's motor sport" is the way Castrol describes their 48-page achievements book being offered gratis by the motor oil company. The book contains a hundred exciting pictures and many facts and figures about races, rallies, records and trials (including motorcycle events) during the exciting '59 season. Address your request to C. C. Wakefield & Co. Ltd., Castrol House, Marylebone Rd., London N.W. 1, England.

OWNERS OF VETERAN VOLVOS which have chalked up more than 100,000 miles are being invited to join the nationwide "100,000-Mile Club" that the Swedish auto firm is organizing. Eligible or nearly eligible cars may be registered at any Volvo dealership.

A CONVEYOR-BELT SEAT for automobiles, devised by one reader, would permit right-hand-side entry and facilitate the entry and exit of physically disabled passengers. Such ideas for safety and convenience have lurked in the minds of many readers who have wondered how to protect and possibly patent their brain-children. The U.S. government now offers an informative booklet, *Patents and Inventions—An Information Aid to Inventors,* which poses and answers many of the questions confronting the patent seeker. This helpful aid may be obtained for 15c from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

FOR FUN ON WHEELS you can't beat *Sports-car Rallies, Trials and Gymkhanas*—which happens to be the title of a book (new revised edition just out) by authors-who-know, David Hebb and Arthur Peck. In a fact-filled, fun-to-read style this 160-page volume takes the mystery out of winning for novices, and also has a lesson or two for the trophy collector. It authoritatively describes and explains technical equipment, tricks of computation, unusual competitive events—and even contains time/speed/distance tables. A must for the serious enthusiast (Channel Press, $6). —Compiled by Erv Rosen

STANDS OUT ABOVE ALL OTHERS WITH EYE-CATCHING LUSTRE—

yet FASTER than any 2-in-1 combination and longer lasting — ALL WITHOUT RUBBING!

FOR THE FIRST TIME you can now PASTE WAX your entire car at one time, rather than section by section — and wipe off anytime—at leisure! ● First, see how suddenly your car gleams with famous RECONDITIONER, restoring original lustre! Apply to entire car, let dry, and merely wipe off! ● Then apply no rubbing Advanced Formula —duration up to 12 months. Both jobs faster than any 2-in-1. ● Both products ideal for new Acrylics, Melamines, as well as Lacquers and Enamels. If your dealer cannot supply you write us direct.

DEALER & DISTRIBUTOR INQUIRIES INVITED

BOTH NO-RUBBING PRODUCTS TESTED AND APPROVED BY MOTOR TREND MAGAZINE





CAR-SKIN PRODUCTS CORP., Flemington, N. J.

I enclose check or MO for $_____. Send me:

_____ 5 oz. Cans Advanced Formula Wax at $2 ea.

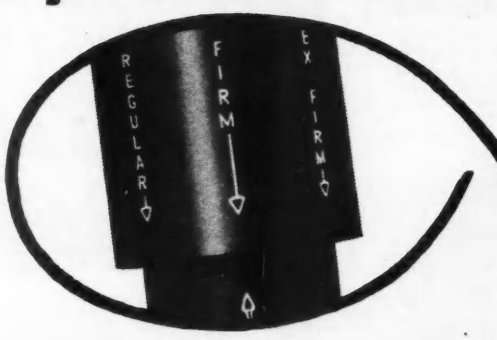
_____ 16 oz. Cans Reconditioner at $1.45 ea. T-10

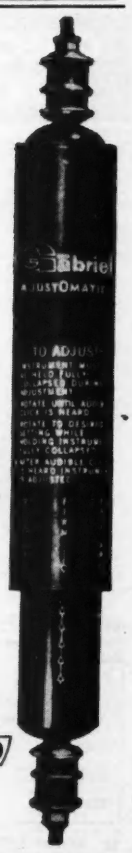
Name .....

Address .....

City ..... Zone..... State.....

Get Gabriel Ajustomatics





the shock absorbers that give selective motorists the ride they want!

If you don't like the ride you get . . . get the ride you like! Install Gabriel Ajustomatics, the *adjustable* shock absorbers that have won the *Motor Trend* Seal of Approval, as well as the approval of car enthusiasts everywhere. And for an extra heavy duty shock, get the Ajustomatic's big brother, the Adjustable "E." Both are Gabriel . . . both are great!

TESTED AND APPROVED MOTOR TREND

THE GABRIEL COMPANY, Cleveland 15, Ohio

YOUR IMPORTED CAR NEEDS

DUNLOP
"THE WORLD'S SAFEST TIRE"



MADE ESPECIALLY FOR THE SPORTS AND IMPORTED CAR

Europe's most popular tire is now available to Americans who own sports or imported cars and who will settle for nothing less than a tire that has been engineered for their car in the finest European tradition.

Call, wire or write for prices

GARDNER/REYNOLDS

R-5 *racing 'cap*

NOW! a new tread. Designed for and by race drivers. Made of 100% natural rubber compounded especially for racing—rebuilt to special rigid racing specifications. Used by most of the top drivers. Send for our price list, you'll be surprised.

GARDNER/REYNOLDS
4758 E. Olympic Blvd., Los Angeles 22, Calif.
Phone: ANgelus 9-0707

CHECKS ROAD HORSEPOWER

*G-METER ACCELEROMETER

Check your car with an aircraft-type instrument that clamps on the dashboard lip without drilling. Requires no cables, hoses or wires. **Measures acceleration, deceleration, and braking efficiency.** Checks engine performance and gasoline efficiency. Keep your car in top mechanical condition with a G-Meter.
* $9.95 per unit



Dealers and distributors inquire

MOTOR TREND

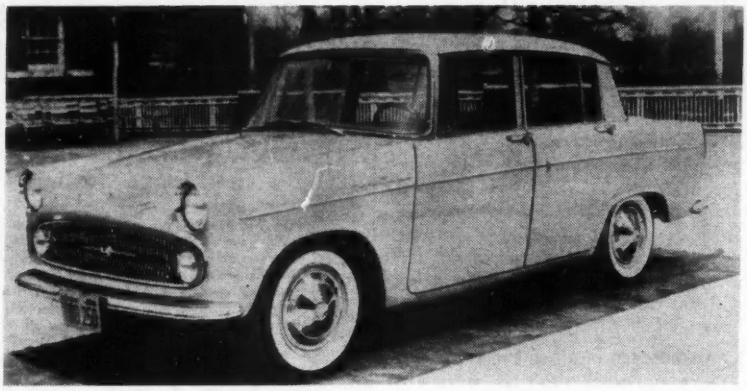
m & h **instrument corp.** - balboa, calif.

P.O. Box 857, Balboa, California, MT-7
Please send ( ) G-Meters. Enclosed is check or money order for $9.95 per unit. $17.95 for two units. **(California residents add 4% sales tax)**

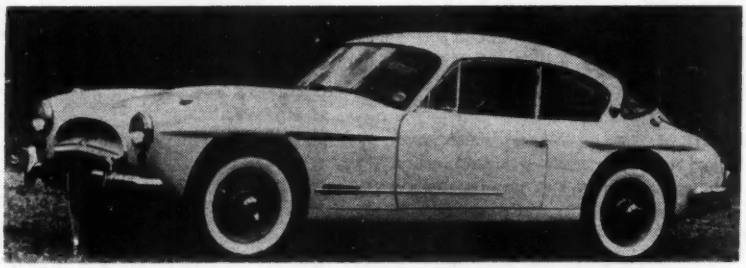
NAME_____

ADDRESS_____

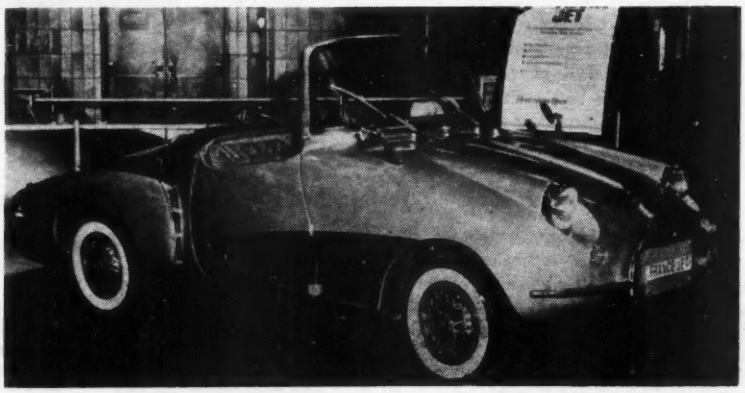
CITY_____ **ZONE**____ **STATE**_____



Imports on the way







TOYOPET TIARA

Most recent addition to the Toyopet family of automobiles is the Tiara model, which was unveiled at the New York Automobile Show. The 4-door sedan is powered by a 4-cylinder, high-torque 75-hp ohv engine that offers "unusual sportscar performance in the low-priced economy sedan class." Price, not yet announced, "will compete with Renault and VW." Importing will start before the year's end.

JENSEN 541-R

Through an agreement between Jensen Motors Ltd. of England and the Midland Continental Corp. of New York City, the Jensen 541-R four-seat sports sedan is now sold in the U.S. Latest model (first tested by MT in Nov. '57) lists at a suggested $7750, including four-wheel disc brakes, wire knock-off wheels, radio, heater, telescopic steering wheel, and genuine English pigskin upholstery. Car has 4-liter, 6-cylinder engine, and a 4-speed gearbox with Laycock de Normanville overdrive.

DATSUN FAIRLADY

The Datsun Fairlady is being introduced in the U.S. by the Nissan Motor Co. of Japan. With an all-steel body instead of the previous fiberglass, the Fairlady is powered by a 4-cylinder, 1200cc engine producing 48 bhp at 4800 rpm. Floor-mounted stick shift works 4-speed gearbox. Parallel torsion bar suspension is used in front, semi-elliptic springs in the rear. Marketing will be handled by Datsun distributors in New York City, Houston, Tex. and North Hollywood, Calif. The West Coast p.o.e. price is $1996.

FRANCE JET

This two-seater sportscar, the France Jet, has a fiberglass body reinforced by aluminum and weighs only 680 pounds. The rear-mounted, aircooled aluminum engine (one-cylinder, four-cycle, 280cc) delivers 19 hp, with a claimed 70-mph top speed and 65-mpg fuel consumption. Other features are central tube chassis with cross bearers, three-speed gearbox, independent suspension; 74-inch wheelbase. Priced at $1595 (East Coast p.o.e.), car will be distributed starting in July by France Jet Motors, New York 5.



Makes Every Car Look Longer, Lower, Smarter

Foxcraft CUSTOM-STYLED FENDER SKIRTS

FLUSH-MOUNTED and UNIVERSAL
Styles with Original-Equipment Fit
and Looks! Stainless Steel or Prime-Coated

★ Ask about Foxcraft Top Carriers, Lido Spare Tire Carriers, Sun Visors, Corvair Grilles.
★ At auto supply, mail order, auto chain stores.

The world's largest maker of replacement skirts presents original creations by Borczak, internationally famous stylist. A design for every car, '52's thru '60's, including popular budget-priced Cruisers. No holes to drill, rattle-proof installation in minutes without tools.

FOXCRAFT PRODUCTS CORP. • Huntingdon Valley, Pa.

NOW! 38% More Performance

MOTOR TREND TESTS THE AMAZING "PECO" RENAULT CONVERSION KIT

Here's good news for every Renault owner, Performance you never dreamed possible is yours—today—with the sensational Peco-engineered Renault Conversion. Precision-built from finest materials, this new Peco Renault Conversion is scientifically-designed as a complete "bolt-on" modification that can be installed by dealer or Renault owner in a surprisingly short time. Check these test results, then read the full Test Report by Motor Trend independent experts:

1. In the 40-60 mph range, the Peco Renault Conversion installed on a standard Renault Dauphine, increased acceleration by a full 38%.
2. The Peco Renault Conversion increased top speed up to 13%.
3. These terrific improvements in performance were gained with extremely small increase in fuel consumption — proof that "engineered-for-the-Renault" Peco Conversions retain the Renault's superlative gasoline economy.



Remember . . . Peco's exclusive "bolt-on" design gives you real freeway performance WITHOUT COSTLY VALVE, VALVE SPRING OR CAMSHAFT REPLACEMENT. Install a tested and proved "Peco" Conversion on your Renault Dauphine or "750" now and discover a new and thrilling dimension of performance. Guaranteed Peco Renault Conversions are simple, reliable and moderately-priced at $185.00, complete to the last nut and bolt . . . ready for immediate installation. The Peco Renault Conversion does not alter basic engine design in any way and cannot overwork the motor in excess of design limitations.

Ask Your Dealer to Write On Company Letterhead to:

ENGINE IMPORTS, INC.
1140 N. Harbor Drive, San Diego 1, Calif.
TRADE INQUIRIES INVITED

SUBSCRIBE TO Motor Trend NOW!

JULY 1960

MOTOR TREND *Subscription Dept.*
5959 Hollywood Blvd., Los Angeles 28, Calif.

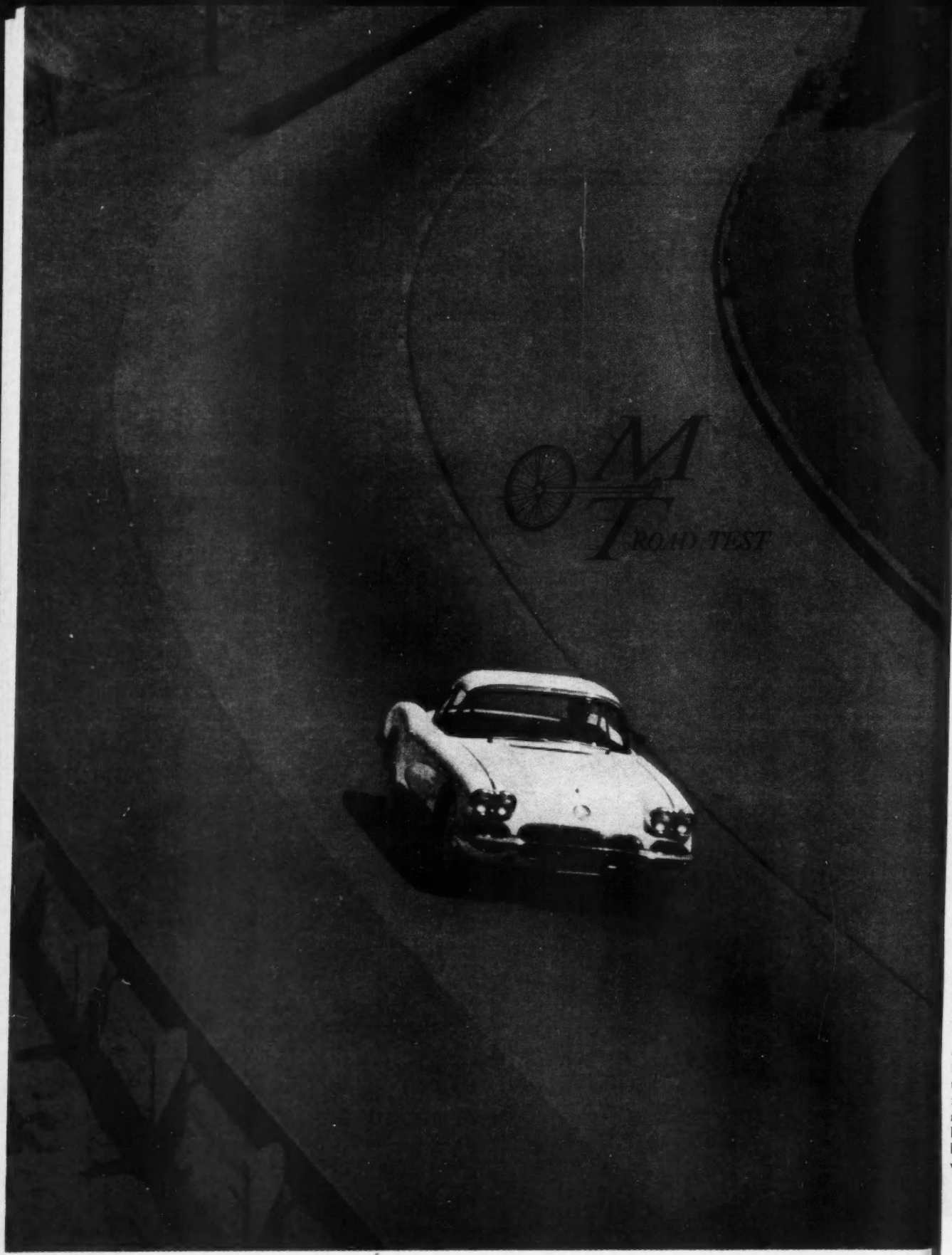
Please send me MOTOR TREND *for:* ☐ 1 yr. $3.50 ☐ 2 yrs. $6.00

(These rates for U.S., its possessions, Canada; all other countries: one year $4.50, two years $8.00.) *Payment enclosed.*

NAME_____

STREET_____

CITY_____ ZONE____ STATE_____


M
ROAD TEST



Latest model has handling qualities to match potent power

CORVETTE '60

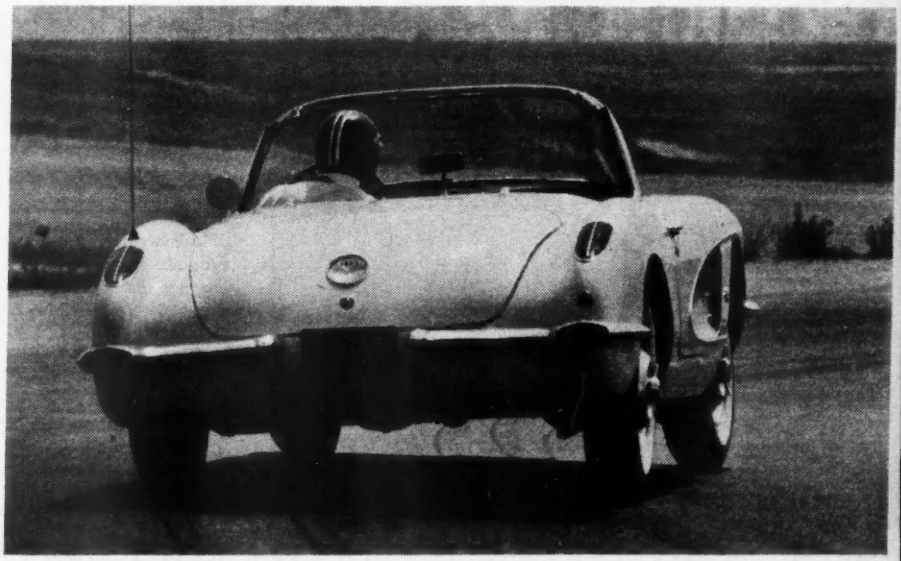
CORVETTE FANS, who were thrilled by recent displays of the XP-700 as an indication of what might lie ahead for future models, can get all the excitement they need behind the wheel of today's 1960 model. We have in mind the Arctic white twin four-barreler with four-speed stick shift that we hated to part with after nearly a thousand miles of highway cruising and 30 "hot laps" on the Riverside International Raceways test course.

Similar "hot laps" on the same course nearly a year ago with the '59 Corvette were recalled as a day filled with fading brakes, the odor of smoke and pulverized rubber seeping into the cockpit, and wild spinning of the inside rear wheel as it left the ground on hard corners. There was also the little item of cracked hubcaps as the wheels flexed under abnormal body lean.

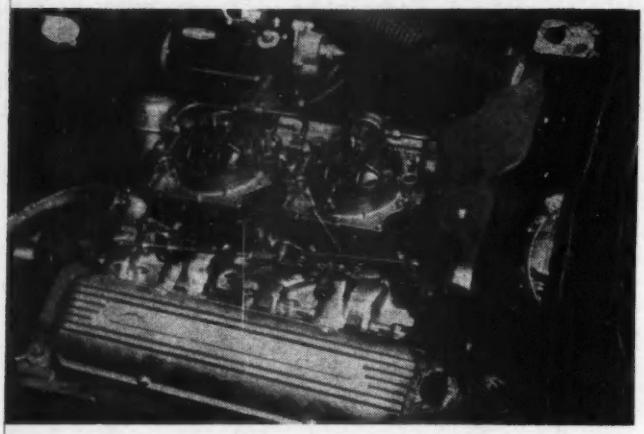
So, with the fifth wheel testing equipment removed and stowed after acceleration tests, and the removable fiberglass hard top safely resting against the timing shack, we donned crash helmet, fastened seat belt, and headed for the first turn. In a car with an engine whose torque can break the rear wheels loose in turns in about any gear, handling, or conventional response to wheel and throttle, is quite important in staying out of trouble when cornering at speed.

Chassis improvements claimed by the manufacturer for the '60 Corvette are certainly true and welcome. We noticed much less body roll due chiefly to a new stabilizer bar that has been added behind the rear axle. Further stability comes from a front bar of thicker material and shallower bends to reduce twist load concentrations. Ride is still comfortable and fairly soft as spring rates and shocks remain unchanged from last year, but rebound distance of rear suspension has been increased one inch. The inside rear wheel stays on the ground, side loading

continued



New rear stabilizer bar and heavier front one keep Corvette flat in corners, prevent inside rear wheel from lifting and spinning. Positive steering and instant throttle response bring fun and safety back to the motoring sport.



Twin 4-bbl. carburetors are part of special power kit that includes Duntov cam. Single, large air cleaner (removed to show carbs) is polished, chrome plated.



Racing-type cockpit, with 3-spoked wheel, short-stroke, positive manual shift, and individual bucket-type seats, is functional for racing, comfortable for road touring.



Well-fitting hatch covers storage space for heavy-duty canvas top that can be raised or lowered quickly by one person without tools. Roll-up windows fit snugly.

on wheels and tires is reduced (we didn't crack any hubcaps), and response to wheel and throttle is definite and predictable.

Brakes have been improved, but only slightly, by better leverage of pedal to reduce braking effort, and slightly larger diameter of front-wheel cylinders. The stock brakes are just not up to the potential of the car and unless it is driven by that "little old lady . . ." the optional ceramic-metallic or sintered iron options are certainly desirable for owners who like to drive Corvettes the way they were built to be driven.

It is not likely that the average person will ever wring his Corvette out on a road racing course, but with the power, speed and acceleration packaged into this sports machine, road racing conditions can unknowingly occur on any highway. That emergency stop from speed, an unmarked blind curve, the necessity of very short passing distances all occur in routine travel and require a car that can handle the job, without jarring your teeth out or torturing your aching back if the pavement is not smooth as glass.

Over the long haul, Corvette comfort for its maximum two-passenger load and minimum of luggage is adequate for average-sized persons. Six-footers and over will find their knees too close to the steering wheel if they do not have the seat adjusting tracks moved back. The roll-up windows and hard top add much to cross-country comfort and bad-weather driving, but Corvette provides a folding canvas top that actually gives more headroom than the hard top, and stows out of sight in its own compartment behind the seats.

Heating and ventilation are good, but the most tiring thing on long trips with hard top on and windows open is wind buffeting the side of the face. Windwings of some sort would certainly make the ride more comfortable.

While styling remains the same on the '60 models with a few more interior colors and deep pile rug offered, other changes, such as propeller shaft driveline angle, have done much to reduce vibration and noise in the driveline. As of this writing, the announced aluminum cylinder heads for fuel-injected models are not yet available, but all new Corvettes with three- and four-speed manual transmissions have aluminum clutch housings, which are 18 pounds lighter.

Further use of this light metal is in an aluminum cross-flow radiator that increases cooling capacity. It is offered as a regular production option only for special-camshaft engines. The MOTOR TREND test car was equipped with one of these options, and water temperature never went over 180° during maximum-throttle acceleration runs or "hot laps" during the heat of the day. This was especially noted as few stock American

cars are able to go through this phase of road testing without a noticeable increase in water temperature.

Corvette's all-synchro four-speed manual transmission is a joy to use, and shifting is often overdone, due mainly to the ease and convenient location of the short, positive lever. Under ordinary driving conditions, unless it is desired to lay rubber for a block or kick up every traffic officer in the vicinity, engine torque is sufficient to lug out rapidly from 15 or 20 mph in 4th gear. While this is not acceptable to the true "sportscar clan," we never heard of anyone hurting a Corvette by lugging down in traffic occasionally. The twin four-barrel carburetors do not load up the engine under these conditions, nor is there any ping. True, shifting down is great, but the temptation to "stand on the throttle" is not always compatible with existing traffic flow.

Shifting also plays an important part in fuel economy, as evidenced by an interesting check made with this car and two entirely different drivers. Driver No. 1 was used to sportscars with comparatively small-displacement engines and manual four-speed transmissions. His average with the Corvette for a week under city traffic and freeway rush hour conditions was 11.4 mpg. Driver No. 2, familiar with large, powerful domestic cars and automatic transmissions, who knew how to handle manual gearboxes but didn't like to shift unless absolutely necessary, drove under practically the same city and freeway conditions during the same peak hours, and turned in a flat 16 mpg. It is a good bet that over the long haul, Driver No. 2 would get better tire mileage and less crankcase dilution than Driver No. 1.

This is a good example of the versatility of the Corvette—it can be enjoyed by speed-minded sportsmen or average daily drivers who like sporty-type cars, and still give service and satisfaction to both.

The public was slow in accepting fiberglass as body material for a production car, although the special builders of such components enjoyed great success. General Motors believed in this pliable, rugged material for car bodies and stayed with it in the face of some pretty rough opposition. As a result, they have continued to improve on their methods of manufacture, materials and assembly to a point where fit, finish and durability leave little to be desired. It is not unusual in Southern California to see the first 1953-'54 model Corvettes with six cylinders and triple side-draft carburetors, their fiberglass bodies still in "cherry" condition.

The Corvette has carved a definite niche in American motoring, and General Motors intends to widen that niche with continued development of this fine, fast two-seater sports machine.

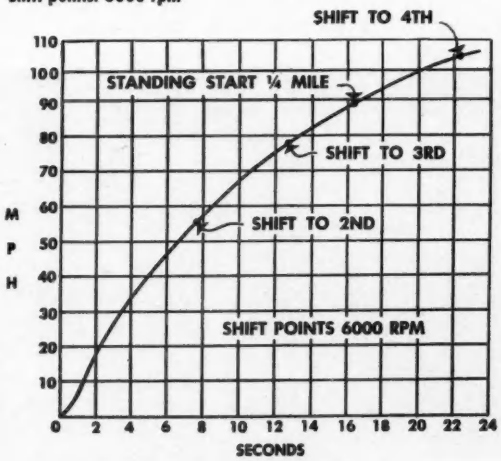


Car At a Glance

THINGS WE LIKE	THINGS WE DON'T LIKE
Smooth, rapid acceleration	Short legroom for tall drivers
All-synchro four-speed gearbox	Wind buffeting with windows open
Dual hard and soft top	Slow brake recovery after hard stop
Excellent handling	
Excellent finish, tight fit of doors, hood and trunk	

Acceleration

0-45 mph 5.3 secs. 0-60 8.4
Quarter-mile 16.1 secs., 89 mph
30-50 3.0 45-60 3.1 50-80 6.9
Shift points: 6000 rpm



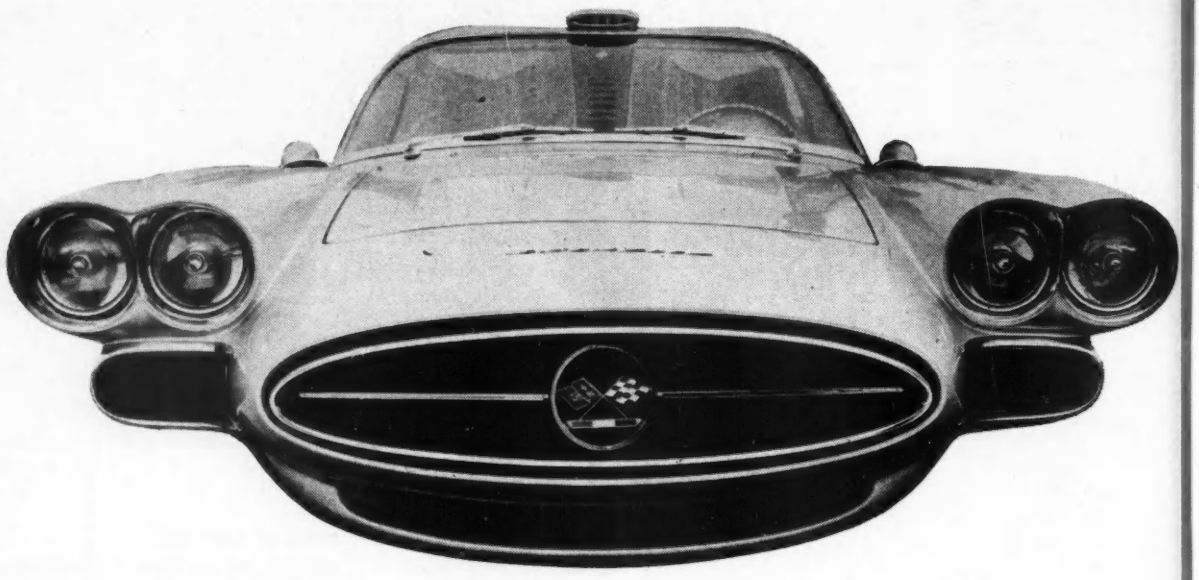
Stopping Distance

From 60 mph to standstill 195 ft.
(In 4.8 secs., with maximum of 0.69-G deceleration)

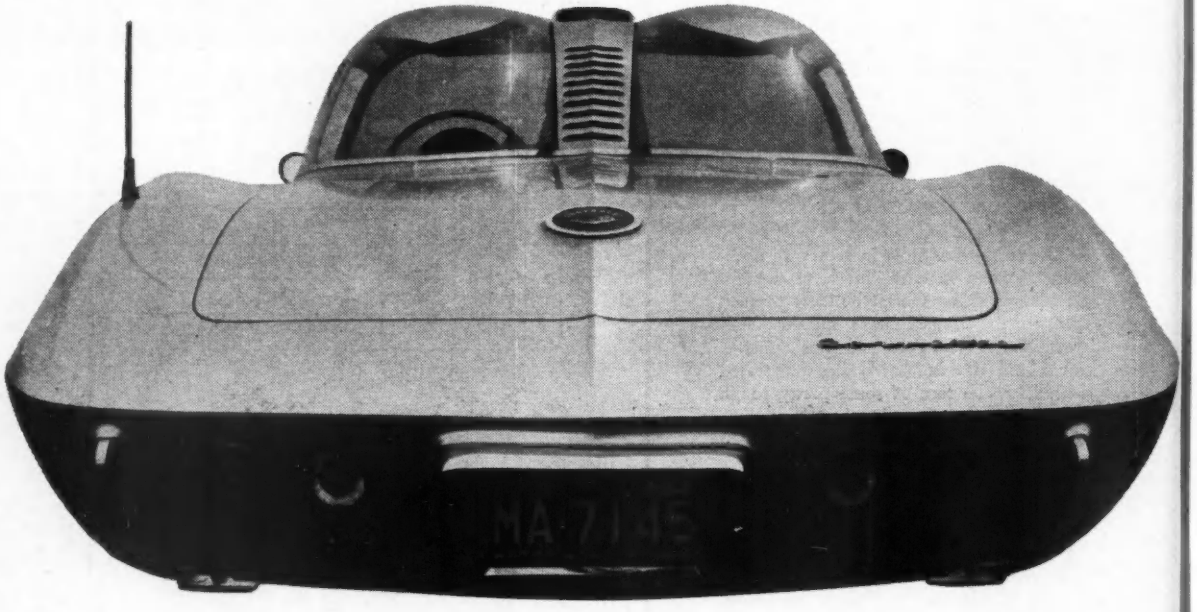
Stop after maximum acceleration to end of ¼-mile 360 ft.
(In 6.9 secs. with maximum of 0.74-G deceleration)

Gas Mileage

	Mpg
City traffic and freeway	14.5
Highway, normal cruise	18.6
Highway, fast cruise	17.9



XP-700



TOMORROW'S CORVETTE?

AUTOMOTIVE STYLISTS must in the main be practical men. But there is a necessary stage early in the development of any vehicle when the stylist is offered the opportunity to execute his wildest dreams. Too often these collected dreams (or nightmares) are revealed as the sportscar of tomorrow.

That is why it is refreshing to see Chevrolet's XP-700—a legitimate sportscar with way-out styling ideas combined with advanced functional innovations. Based on a standard Corvette chassis, the XP does something that many idea cars do not—it runs. The fuel injection engine is a production item prettied up with chrome and crackle finish.

It is in the area of styling that the XP makes many of its points. Take a good head-on look without wheels, as in our opening illustration, and the car's missile-like appearance becomes strikingly obvious. From the tail, surmounted by its transparent twin-bubble passenger canopy, the XP-700 appears as though it should be orbiting the earth. The long fiberglass silhouette is only 48 inches high, four inches lower than the production body, and it looks even lower.

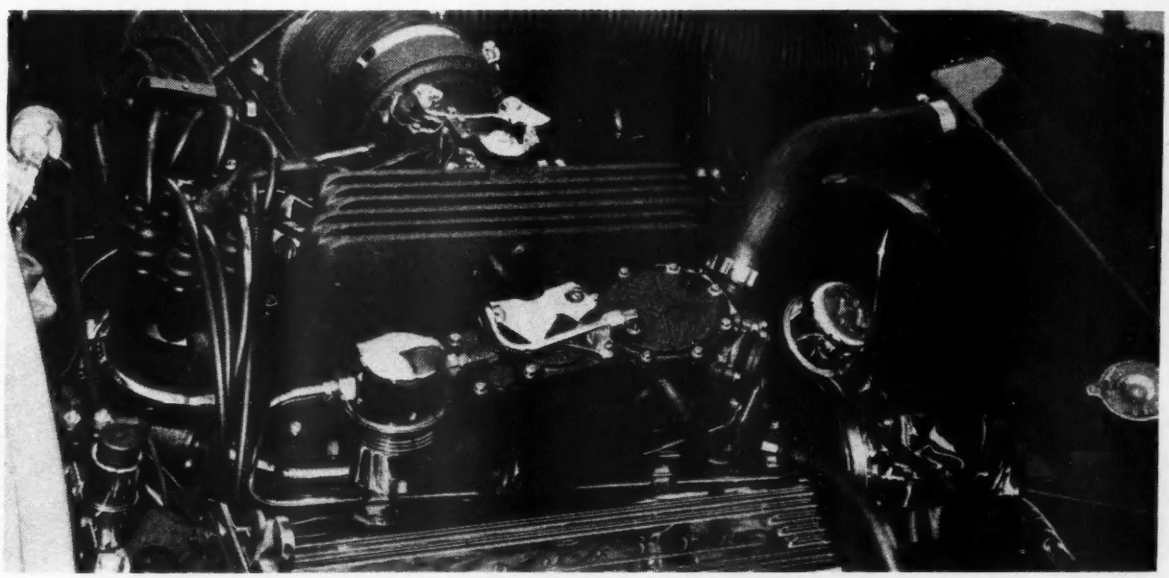
Chief General Motors stylist William L. Mitchell takes credit for the car's design but he has been influenced, however subtly, by customizers. Witness the floating grille—a technique developed over the years by MT's Custom Car Editor, George Barris. Also, the clear glass headlights that resemble Lucas driving lights—much in favor by Barris in his recent customs.

The transparent canopy has been silvered in the manner of a one-way mirror. Occupants can look up but outsiders will see only their own reflection from the top. This is primarily to cut down interior heat. Mounted at the top center of the windshield is a periscope rear-view mirror that is said to give an unobstructed view of the road behind. This is one accessory that will shortly find its way from idea cars to production. On the driver's door is a racing-type mirror that is cleverly molded as part of the body. Fender louvers are, for a change, functional and aid in brake cooling.

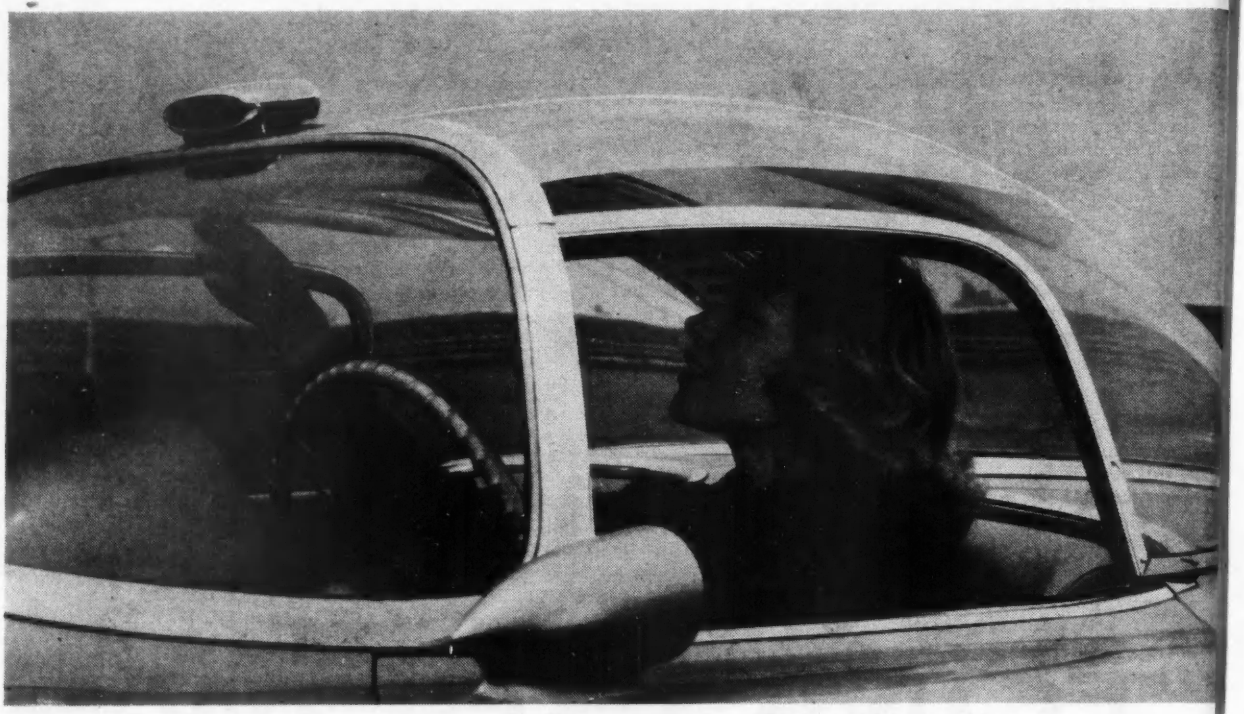
The entire car, inside and out, is finished in pearlescent silver, a color blend largely developed and made popular by customizers.

Why does Chevrolet build such a one-off? The publicity value is tremendous, but in this case it appears that virtually all of the ideas utilized are so practical that they could go into early production. That is, if the public likes what it sees.

continued



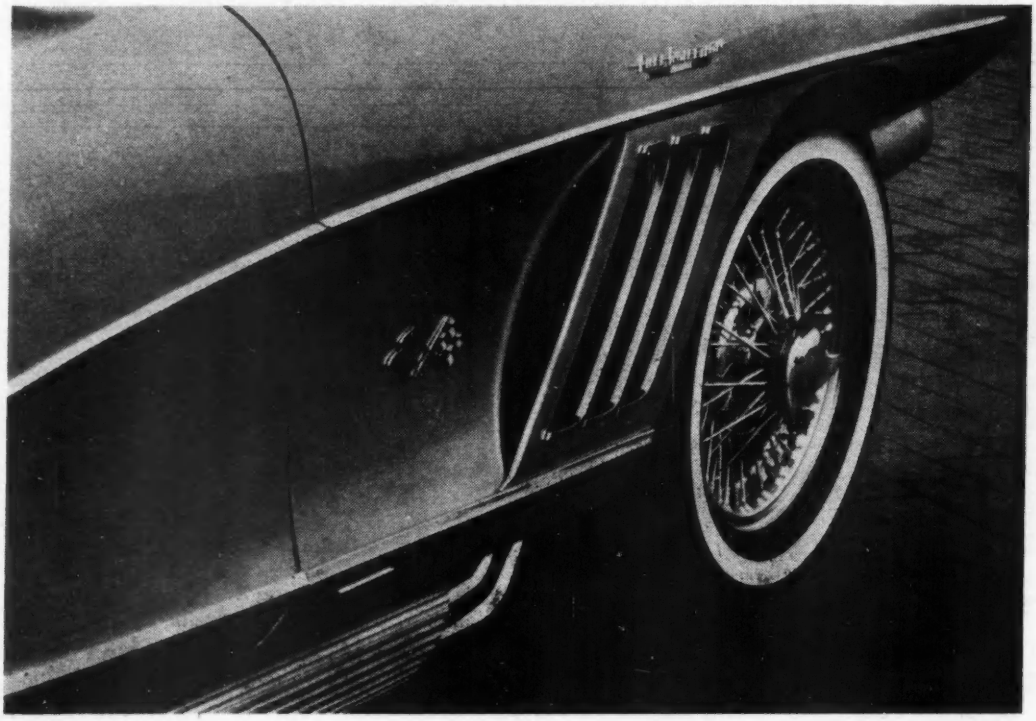
Standard Corvette fuel-injection engine has had every exposed part either chromed or finished in crackle paint. Many of Detroit's dream cars are not even powered; the XP Corvette is functional.

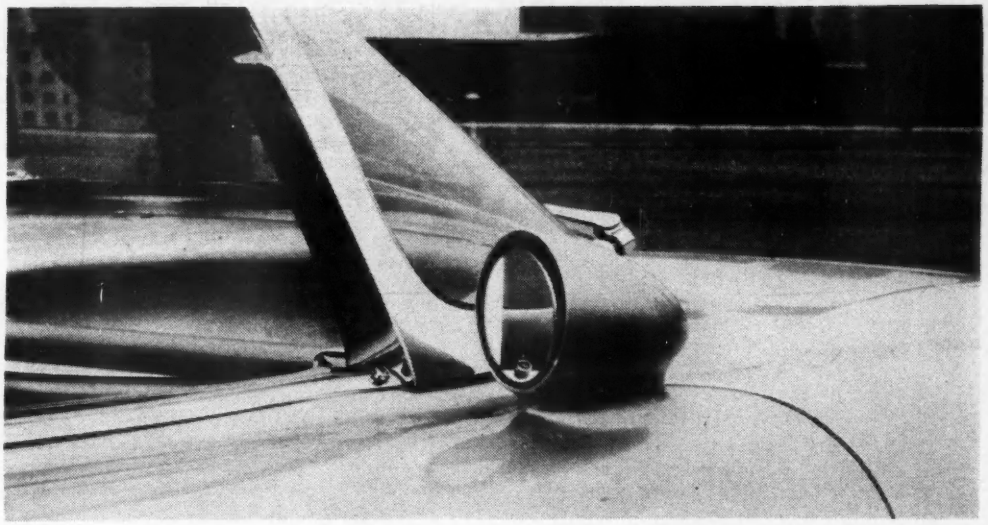


Pretty model adjusts periscope rear-view mirror in bubble canopy. It gives clear view of road behind.

XP-700 continued

Louvers are functional, extract air for brake cooling. Decorative chrome covers mufflers and tailpipe.





Streamlined, racing-type rear-view mirrors are mounted on doors; molded directly to fiberglass body.

XP-700		'60 Corvette
102.0 ins.	Wheelbase	102.0 ins.
57.0	Front Tread	57.0
59.0	Rear Tread	59.0
184.5	Overall Length	177.2
38.3	Front Overhang	33.0
44.7	Rear Overhang	42.4
48.3	Overall Height	52.1
72.8	Overall Width	72.8

SECRETS OF THE WINNINGEST CORVETTES



by OCee Ritch

Consistent victors against infinitely more expensive and supposedly hotter competition cars, a group of Southern Californians learned what makes Corvettes go fast—and win.

THE BALMY WINTER CLIMATE of Palm Springs, Calif. attracts such distinguished loungers as President Eisenhower, Ibn Saud, Frank Sinatra and Marilyn Monroe. While none of these luminaries was in attendance at the 17th running of the Palm Springs Road Races last January, it is safe to say that they would have been completely ignored during the 10-lap B and C Production contest anyway.

The reason? On the grid in this SCCA event was a flock of the West Coast's hottest Corvettes led by Bob Bondurant, Tony Settember and Vince Mayell. And, dotting the field like raisins in a shoo-fly pie sat a potent assortment of challengers including, in the front row, Bill Sturgis with the Ferrari Berlinetta that he co-drove to a class D *Modified* victory in the 1959 Road America 500, and Dave Troffer of Seattle behind the wheel of a sizzling new Mercedes 300-SL roadster neatly positioned in the second rank.

In any other section of the country a bookie could have induced a nice piece of action by offering even money on the field. If betting were a part of the sport you would have to give about 10 to one to get the local fans to wager as much as a streetcar token on the imported speedsters. The enthusiasts here are convinced that their "Detroit Iron" V8s are more than a match for the best production sportscars built anywhere in the world.

This go was no exception. Marked by the shuffling of the lead as many as five times per lap, a side-by-side tour by the first two cars from Turn 4 to Turn 7, including the mile straightaway—with no more than a foot separating the contestants and ending in a twin spin that almost permitted the third man to grab the checkered flag—the thrilling, fender-banging brouhaha confirmed, once again, popular opinion. At the finish: Corvette, Corvette, Corvette—farther back: Mercedes, Ferrari and the rest of the pack.

So much for the story of a race. The important factor, the standout impression that a seasoned observer had to take away with him, was the manner in which the Corvettes took the measure of the imported thoroughbreds: The Chevies were beating 'em at their own game.

A highly placed factory official who watched open-mouthed throughout the event made a statement that should be graven in precious metal and mounted on a plaque to be bolted to the wall of the Corvette factory in St. Louis: "I've heard about the way these guys go out here, but I never thought I'd see anything like this."

Other Corvette drivers have carried the word back to the hinterlands: If you plan to race your Chevy with this group, be prepared to go like hell or get run over.

"The Group" is a fluctuating handful of combatants who come and go upon the scene as finances, family and inclination dictate. It has centered, since 1956 when Corvettes began to emerge from their cocoons, around Bill Thomas of C.S. Mead Chevrolet in Pasadena. Bill's No. 58 Corvette with a wide variety of drivers compiled a "lifetime" record of 43 overall victories out of 54 starts with five seconds, one third and two fourth places to round out the score. On only three occasions did it fail to finish. Other cars in the meld have similarly impressive histories.

Possibly the best proof that "these guys" have an edge might lie in the fact that while Mercedes and Jaguar were still winning races in the great slice of the United States that remains outside Los Angeles County, no Merc or Jag took a production go away from a Corvette in Southern



CORVETTES AT POMONA TYPIFY WESTERN

California from July 28, 1957 to July 18, 1959 . . . . nor have they been able to crack the winner's circle since.

Thomas and his cohorts do admit to two smudges on their record: They didn't invent Corvette racing, and it took an outsider to show them the way. Dick Thompson, of Washington, D.C., came out to have a fling at the old Pebble Beach course in 1956. Daring Dick's battle with Tony Settember in a 300-SL had the chilled crowd lurking among the dark pines in a frenzy of excitement. This was the first time anyone had seen a Detroit Monster—and this one virtually showroom stock—so close to "real" sportscars in competition. Among those in the pits whose opinions were sharply revised that day were the aforementioned Thomas and Jim Peterson, the latter a top Jaguar chauffeur. Peterson says he "saw the handwriting on the haybales," as far as his mount was concerned.

This combination turned up at the next race with a hastily prepared Corvette to see if they could make like Thompson. The blast, at Santa Maria, Calif., at first looked like a runaway for Peterson who led handily for four laps until his brake shoes began to wear through the drums and he had to settle for third overall.

Thompson reappeared at Palm Springs (where three of the fiberglass roadsters were entered). By now car preparation had fallen to speed expert Racer Brown and Bob D'Olivo of MT's photo staff. There Thompson took the measure of nine (count 'em) 300-SL's including Paul O'Shea who was on his way to a National Championship. Needless to say, there were several more Corvettes at the following race meet and sales began to pick up in the Los Angeles area. Dealers even began to order the cars instead of screaming like wounded panthers when they saw one on their quota sheets.

Corvette victories were not immediately widespread nor instantaneous, however. As those who followed the sport at that time will recall, the cars were far from perfect for competition. Thomas and the bunch listed a flock of undesirable attributes: The three-speed transmission was weak, synchro drums broke easily; it was necessary to change the ring and pinion after every race.

A brisk correspondence with the factory was also begun about the brakes. The narrow drums, poor heat dissipation and the stern lining combined to produce as much as .200-inch wear per week end of racing. Brakes often got so hot that the return springs would be annealed and lose all tension. Another performance headache centered around the four-barrel carburetor which consistently flooded over in the turns and deprived the car of its greatest asset at the time—good acceleration.

As a result of the race experience gained here coupled with the Sebring data compiled by John Fitch, Corvette engineers set about improving the breed. As fast as the factory moved, however, the Coasters were just a shade ahead of them, a situation that prevails to this day. Even now, Thomas' fuel injection manifold which adds as much as 20 road hp to the 283 Chevy is being studied by the powers at Chevrolet. The modifications to this part have stemmed directly from race-tuning efforts.

The early Corvettes, rated at 225 hp,

continued on page 80



At Pebble Beach, Corvettes made early good showings in sportscar racing and revealed inherent winning possibilities.



HOT DOGS, BOXING IN 300-SL MERCEDES ROADSTER (CENTER REAR). WITH PROPER PREPARATION, CARS WILL OUTHANDLE THE BEST.



PUSH OR PULL?

How much do engine and driveline arrangement really affect the way a car handles? Here's a review of the principles involved—plus driving impressions of some cars that demonstrate the various combinations.



ONLY VERY RECENTLY have American motorists given any attention to the relative arrangement of automobile engines and drivelines. Except for some imports and the Corvair, passenger cars had engines in front driving the rear wheels. As designers lowered roof lines, the driveline tunnel encroached ever more into passenger space. Indeed, if this situation continues, as appears likely, sedans will become four-seaters and the six-passenger family sedan will disappear.

But there are two basic alternatives available. They are rear engine-rear drive and front engine-front drive. Not that these are unmixed blessings; each brings its own problems. Very simply, rear-engined cars *tend* to oversteer; conversely front engine and drive autos *tend* to understeer.

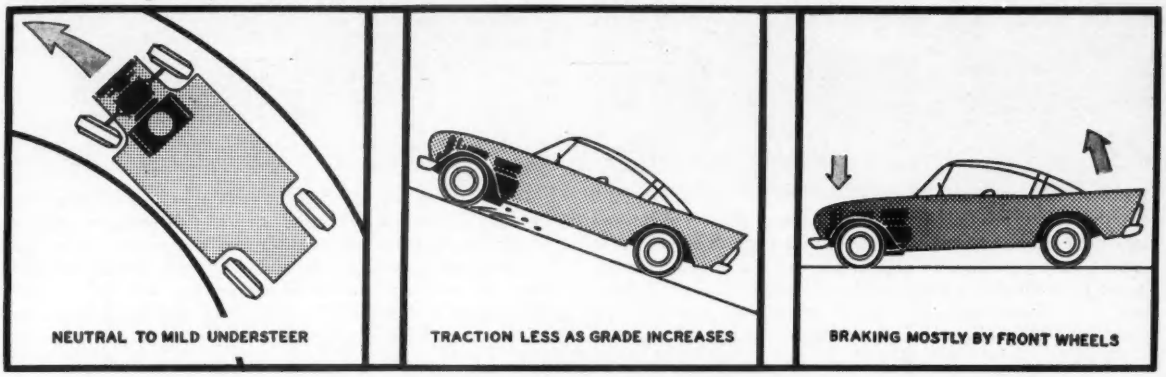
Soon we shall see at least one other major manufacturer plunging into the unknown territory explored by Corvair. Ford has been experimenting for some time with *front-wheel* drive. When will it be available? Certainly by 1962; perhaps sooner if competition forces Ford to move more rapidly.

Until now, the assorted non-standard layouts have been limited (except for Citroën) to relatively small and lightweight engines in compact and economy cars. This too may change and Ford could be the catalyst. The firm has solved many of the problems inherent in heavy-engine, front-wheel-drive layouts and we believe they will arrive at a satisfactory solution.

On the following pages we shall present some representative examples of engine/drive arrangements currently available—also how modern engineering has worked out the disadvantages while preserving the desirable features.

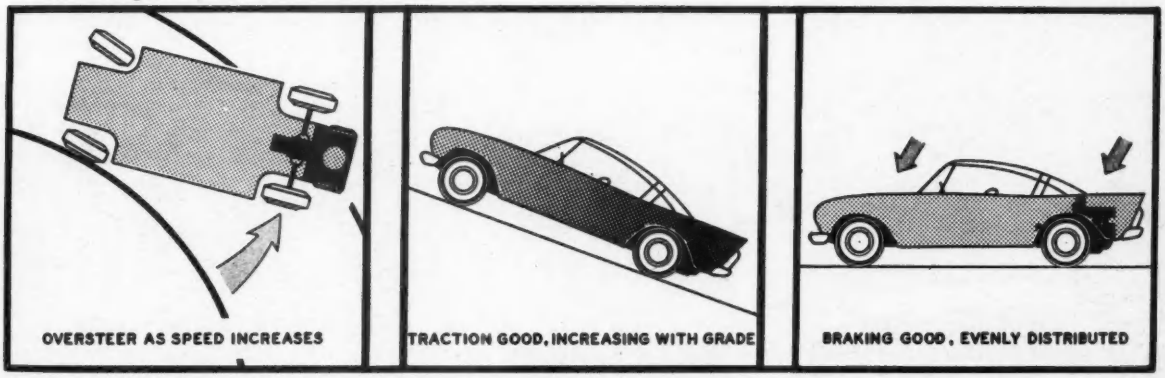
The Theories of Engine/Drive Location

Front Engine, Front Drive



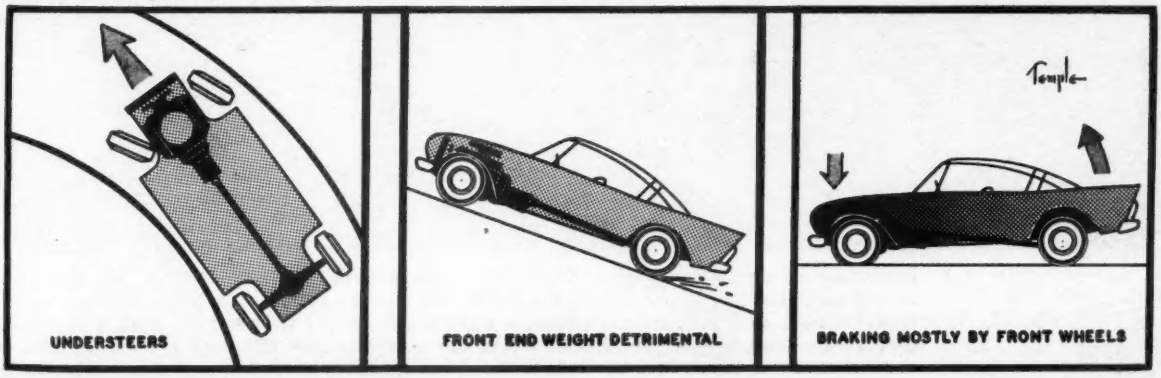
Rounding curve at high speed will usually cause front end to let go first. *Climbing hill transfers weight to rear wheels, away from front driving wheels.* *If traction or braking unequal, front-drive car may turn during braking.*

Rear Engine, Rear Drive



Pendulum effect of weight at rear may cause spin during high-speed turning. *Weight transfer to driving wheels, rear-engine car best for hillclimbing.* *Braking transfers weight forward, equalizing the traction on each wheel.*

Front Engine, Rear Drive



Weight of car is ahead of rear driving wheels, hence car tends to go straight. *Hillclimb traction is generally good but dependent on weight distribution.* *Nose-down, tail-up braking is normal and car may spin if traction unequal.*

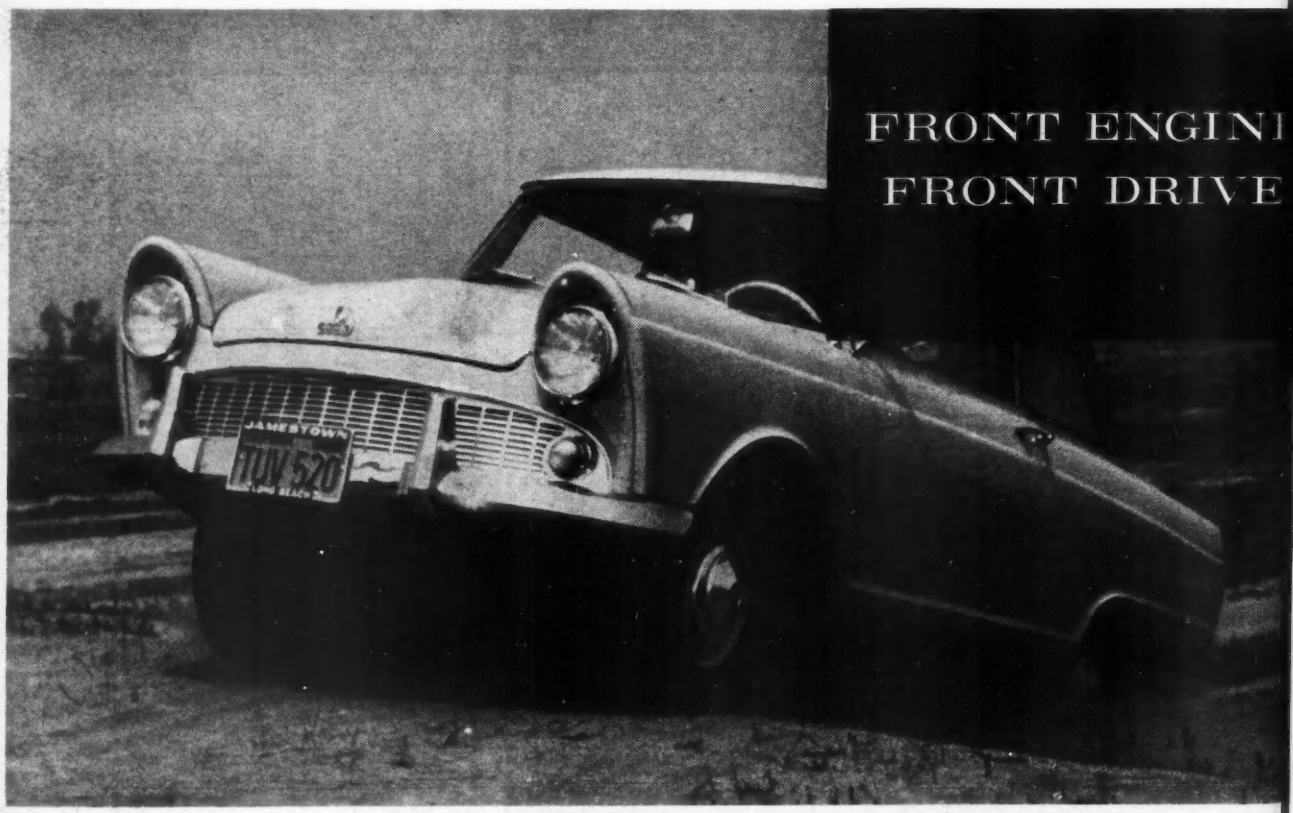


FRONT-WHEEL-DRIVE CARS, such as the DKW 750, concentrate the weight mass to give maximum front-wheel traction and still keep the rear end lined up in the direction of travel. Loose gravel, hard pavement, or rain-slicked surfaces are easily negotiated by maintaining adequate throttle while turning. Thumping, high maintenance of front U-joints, and severe understeer have been eliminated by modern engineering advances.

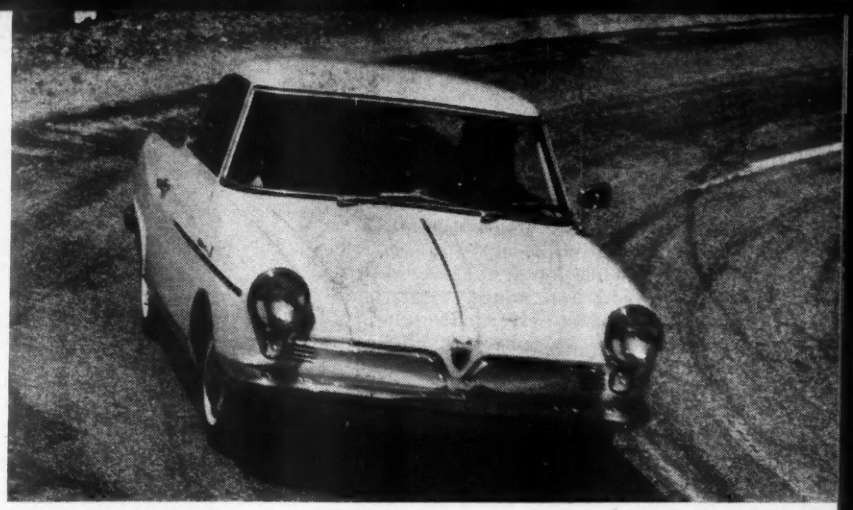


Inboard brakes for the front wheels relieve suspension units of hard braking stresses and twists, aid anti-dive geometry in supporting front end to allow rear wheels to do their share of stopping. System is successful even with engine located in front of axles and car stops evenly and quickly on downhill grades, which add to weight shift. Straight rear axle and independent front suspension are sprung with torsion bars.

FRONT ENGINE FRONT DRIVE

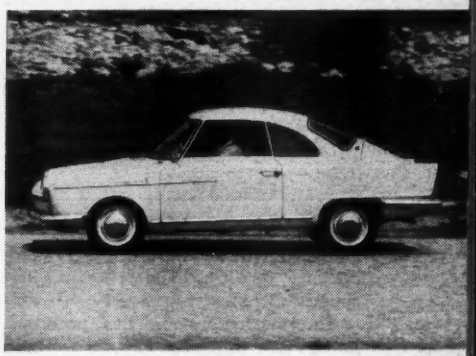


It takes quite a steep grade to effect enough weight shift to break DKW's front wheels loose from their driving grip, even on poor traction surfaces. With rear wheels well down the steep incline of a dirt bank, the front drive pulls out easily from a standing start with little wheelspin. Backing up steep grades, out of ruts, or other hazards of back-country travel that these little cars seem to thrive on, is even easier as maximum weight is transferred to the driving wheels. Rugged three-cylinder, two-stroke engine of DKW 750 defies over-revving as there are no valves to float or bend and the engine just winds on and on in any gear necessary to climb the grade, pull out of the ditch, or stay with traffic.



TAIL-HEAVY, extreme oversteer habits, once characteristic of rear-engined cars, have been virtually eliminated from NSU's Sport Prinz by design and engineering. Small engines, further lightened by lavish use of aluminum alloys, have reduced the concentration of weight mass at the rear, and low roll center, firm springing and good shocks minimize the steering effect of swing axles moving through large arcs of rather short radii. Adhesion of tires, affected by hard or soft tread, and tire pressures, are a bit more critical with rear-engined cars, but the stock rubber on the Prinz is adequate to hold the

REAR ENGINE, REAR DRIVE



line in corners. Slight dip under hard braking shows how light the rear-engine mass of the Prinz really is. Rear wheels still do most of the stopping which allows front ones to remain unlocked and maneuverable.

Steep hills with poor traction surfaces are a breeze for the Prinz, as weight transfer to the driving wheels really gives them a chance to transmit full power to the job at hand. Independent rear suspension, almost a necessity with this type of engine location, keeps full traction surface of tire in contact with ground, allows individual wheels to drop into holes and ruts without tilting car into impossible angles and dangerous weight shifts.

Backing out of similar hazards requires a great deal more care as there is some traction loss due to shift in weight from rear to front that increases with the grade angle.

FRONT ENGINE, REAR DRIVE





NOT UNTIL ONE LOOKS UNDERNEATH does the Triumph Herald appear to have other than a conventional front engine-rear drive layout. Front suspension with two unequal length A-arms at each wheel, coil springs and tubular shocks, is conventional. But at the rear it's another story: fully independent with swinging axles. This suspension is unusual except on an expensive sportscar or on a rear-engined machine where independently sprung wheels are necessary. The arrangement is simplicity itself. The hubs are located by a transverse leaf spring and a pair of short radius rods.

Very nice, but why bother? Swing axles are more costly and unless their installation offers some direct benefit in one or more of the three basic areas of handling—braking, cornering and hill-climbing—it appears useless.

The illustrations on this page tell a graphic story of what happens during the extremes of the three conditions. During normal cornering, braking or climbing there is no indication of anything unusual.

The top photo, braking, reveals that during a panic stop there is some front end dip. It doesn't feel excessive but it's there. There is no rear wheel hop on uneven surfaces, possible with a solid rear axle.

During hard cornering, center photo, the swing rear axle asserts itself. Front engine-rear drive cars traditionally understeer; they require additional wheel pressure to maintain the desired path in a corner. This is not true of the Herald; it oversteers. Progressively less pressure is required to maintain a turning line because the rear end drifts slightly outward. The action is neither tricky nor particularly undesirable. In fact, it offers a high degree of control for the motorist who appreciates good cornering.

Hillclimb traction is good. The independently sprung rear wheels seek their own level on soft, irregular surfaces and bite in.

As a variation on the front engine-rear drive theme, the Triumph Herald speaks well for modern engineering design. It is a happy combination.





FRONT ENGINE, FRONT DRIVE





THE DOLL-LIKE AUSTIN 850 is an inspired masterpiece of engineering. Designer-developer Alex Issigonis has solved problems inherent in front-wheel-drive small cars and has produced a vehicle that in many ways departs from established principles. Barely 10 feet long, its seating space (for four) is amazing, there is a very usable trunk, and comfort is first-rate.

But how does it drive? Front-wheel-drive cars are generally plagued with difficulties. Built-in understeer with serious steering wheel kickback during cornering is one dilemma, the result of having to turn the wheels that transmit the power to the road. And of course, concentrating the weight of engine, gearbox, differential and driveshafts at the front wheels doesn't help weight distribution. Compensating for these disadvantages is the stable feeling of being pulled around corners.

The 850 understeers, desirably so, and there is no appreciable wheel fight. Turn the wheel and the car tracks beautifully. The center photo depicts the condition; some body lean but a sensation of complete security at any speed. This machine s understeer is deliberate and is accomplished by mounting the engine transversely between the front wheels with transmission and differential directly beneath engine. Weight distribution is 60 per cent on the front wheels. If a driver should corner too rapidly, closing the throttle slows the car and reduces the cornering radius—a valuable safety measure.

During hillclimbing the front-wheel-drive car is at a disadvantage. Weight transfers to the rear wheels and traction is lost. In theory this is true of the 850. In practice the car climbs steep gradients with ease (bottom photo).

Flat is the way the 850 stays during hard braking. The no-dip is largely due to the ingenious rubber suspension elements which become progressively stiffer with load.

It's a fine small car, the 850, and one that demonstrates some fascinating advances in current automobile engineering.

How does one define a "luxury car"? It's more than limited production and precision assembly; it's owner pride in "plush quality," with cost no object.

If it's LUXURY you're after...

ABOVE THE SUPER and super-deluxe production American automobiles there is a class known as the luxury model. These are usually of limited production and abound with refined built-in versions of what are extra-cost options on most mass-produced Detroiters.

Because they are produced by the thousands per year instead of millions, more time is spent on the actual assembly of each unit. This provides the workmanship, detailing and more expensive components that buyers of luxury cars appreciate and are willing to pay for. Design, styling and interior appointments are a matter of personal choice as far as visual appeal is concerned, but certain practical aspects of these features are important to the buyer ready and willing to invest five or six or seven thousand dollars. Just how much more than a set of wheels, an engine, a body, and a place to sit do you get for such an investment?

Much has been said about luxury cars representing some sort of prestige symbol or a badge indicating that the owner has "arrived" at a certain station in his career. This may be true but is possible only because owners who appreciate quality, and purchase on that basis, have made such cars a symbol of "class." Regardless of the reason for purchase, the luxury models represent a great deal of extra effort on the part of the manufacturer to produce something different in limited quantities.

Analyzing the luxury three—Cadillac, Lincoln Mark V and Imperial—on a mechanical basis exposes some of the unseen "extras" that the manufacturers have included to achieve mechanical as well as styling luxury. The biggest measurable mechanical difference among the luxury three is in the engine, with Lincoln boasting the largest displacement at 430 cubic inches, followed by Imperial at 413 and then Cadillac at 390. The cars tested were equipped alike with power accessories and all were air conditioned.

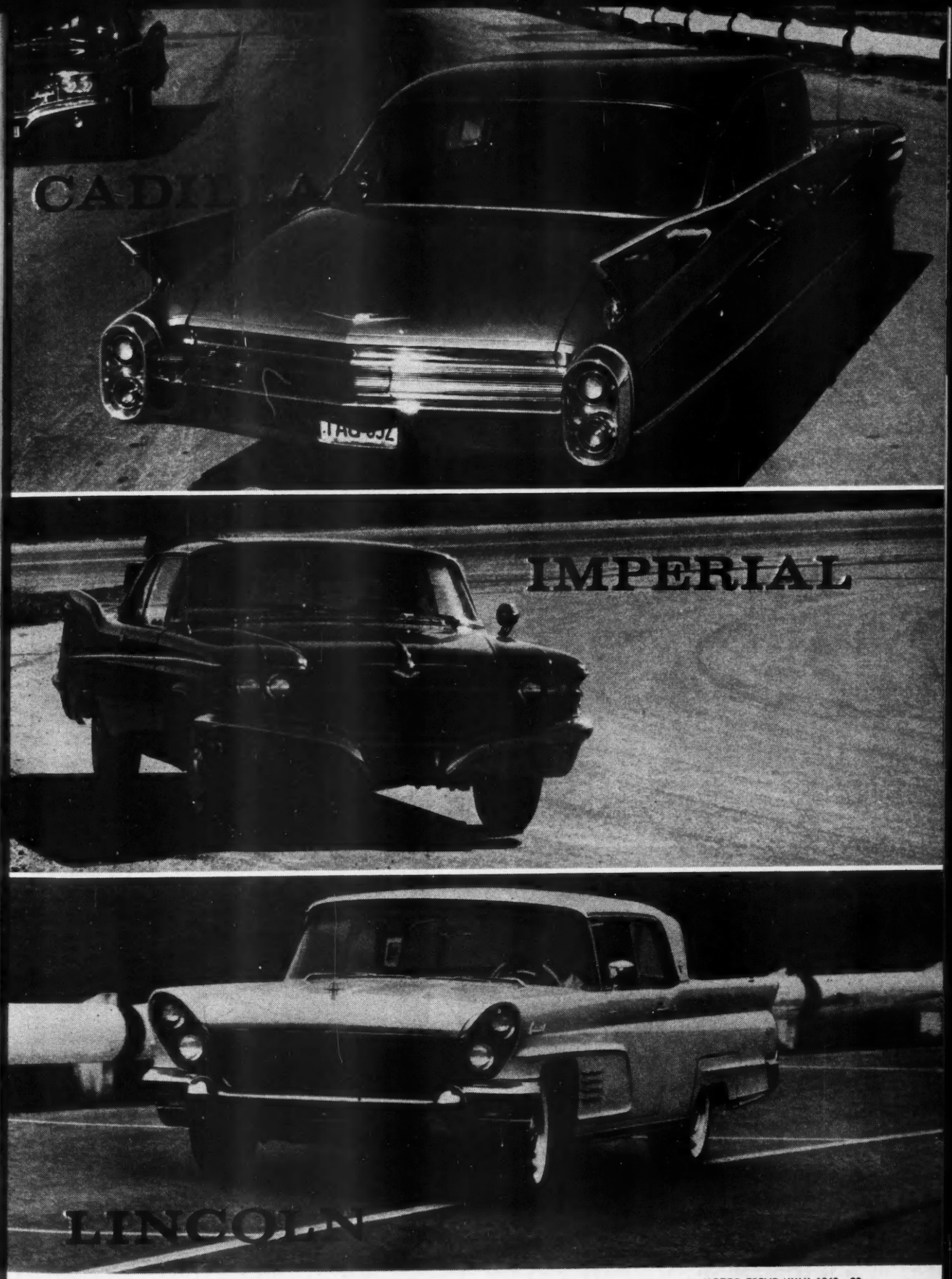
While it is not likely that they are ordinarily purchased for drag racing, we did make quarter-mile acceleration runs just to see if the times were as far apart as the piston displacements. Full-throttle acceleration on all three cars is smooth, effortless and quiet—a tribute to the excellent valving and shift-point selections of the automatic transmissions, but Cadillac and Imperial negotiated the distance within hundredths of a second of each other and a fraction of a mile per hour, leaving the Lincoln lagging by three seconds and four miles an hour.

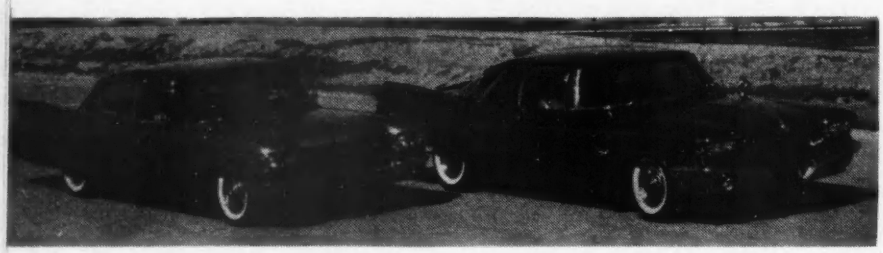
Fuel consumption, under as near-identical driving conditions as we could create, gave Lincoln a slight edge despite its larger engine. Premium fuels are mandatory with the 10 to 1 compression ratios for Lincoln and Imperial, 10.5 to 1 for Cadillac.

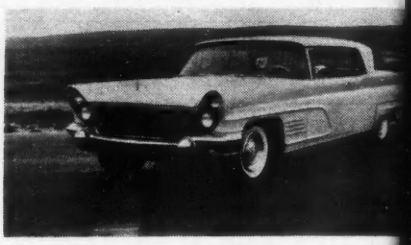
Comfort, convenience, driving ease, visibility, interior head- and legroom, and performance, as well as heavy-duty suspensions, wheel bearings, shocks and extra soundproofing are so similar in these cars that the choice will have to be a personal taste on the part of the buyer. The styling, both interior and exterior, varies widely, with Cadillac's emphasis on the beauty of function and conservatism. Imperial takes another view with lavish and often garish use of chrome, double bull's-eye instrumentation that is attractive but confusing, with controls scattered all over the driver's compartment. Lincoln has a happy medium with highly decorative but pleasing interiors combined with functional instrumentation. They have one of the best heater-ventilator-air-conditioning controls we have ever seen—a single knob with large dial indicator that controls everything connected with interior temperature.

Freon-filled, nylon-skirted shocks, larger finned rear brake drums, and self-adjusting shoes that adjust every time the car

continued on page 40


IMPERIAL
LINCOLN





America's most luxurious production cars, Cadillac, Imperial, and Lincoln Mark V, emphasize comfort, prestige, reliability.

LUXURY: CADILLAC, IMPERIAL, LINCOLN

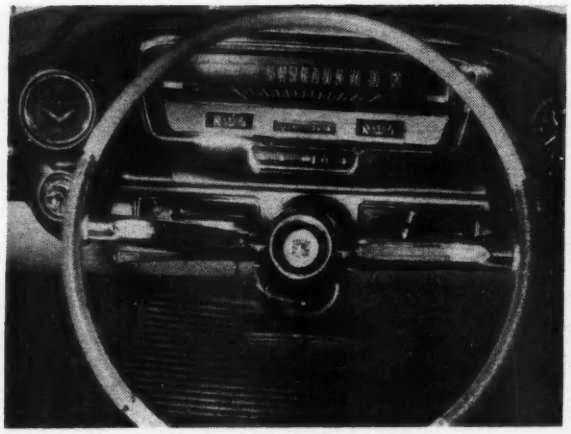
continued

is operated in reverse are just a few of the unseen goodies offered to Cadillac buyers. Imperial has changed rear spring rates and snubbed its front torsion bars with specially valved shocks to preserve high-speed handling while softening the slightest bump. Lincoln made vast improvements in springing in their 1960 models, with large-diameter shocks, wider spring leaves with tip-liners and heavy rubber shackles. Brake lining thickness has been increased as are the number of rivets, and of course, last year's self-adjusting feature has been retained. Lincoln has also gone to a new two-barrel carburetor to replace last year's four-barrel.

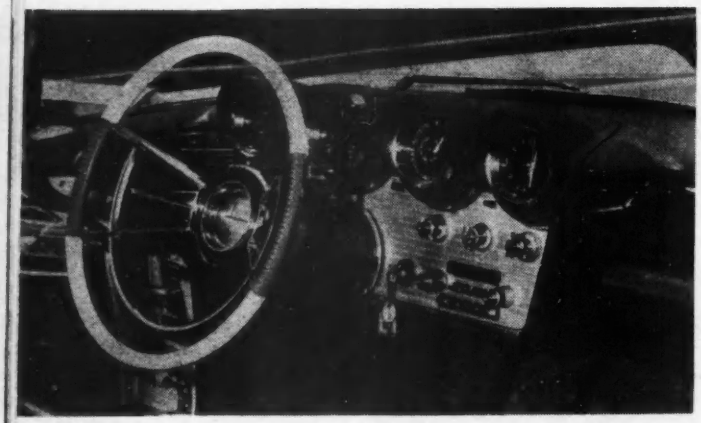
All the luxury cars have placed a great deal of emphasis on smoothness of operation, and each has developed its own engine, gearbox, and body mounts for maximum vibration absorption. It would require a book to list all of the mechanical features that are either better, stronger or more refined than those found on "ordinary" automobiles.

Sheer comfort is no doubt behind the design of these cars and they certainly provide a maximum of that, with the added comfort that comes with peace of mind in knowing that reliability also adds to the pleasure of owning and driving any car, especially one of these luxury automobiles.

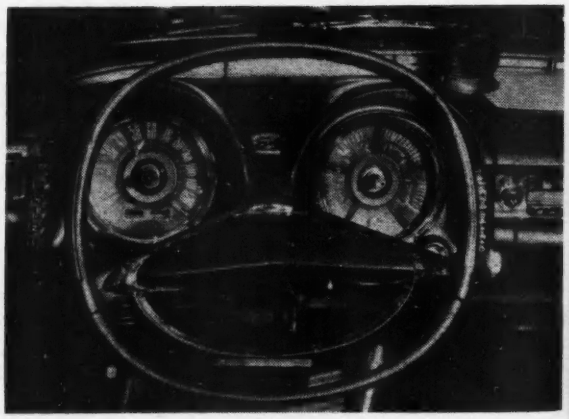
—Chuck Nerpel, Technical Editor



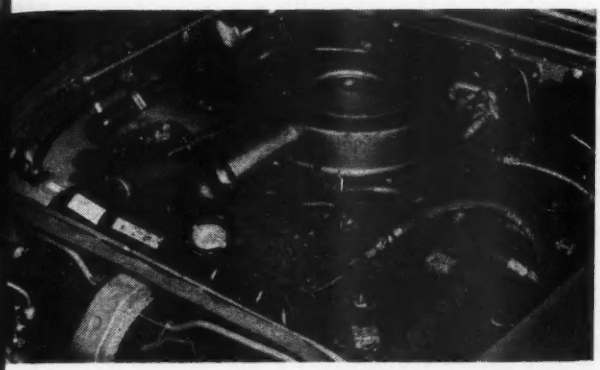
Cadillac driver's compartment minimizes distracting bright trim, gives excellent view of instrumentation, easy access to all controls. Entire car is a perfect example of the beauty of simple, functional, well-finished details.



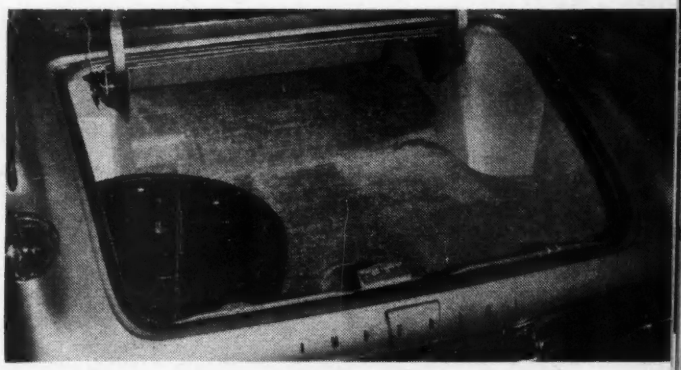
Lincoln uses deluxe version of Ford's deep-dished safety wheel and individual hooded instrument dials, with neat panel layout to right of steering column that contains easy-to-reach knob-type controls and pushbutton radio.



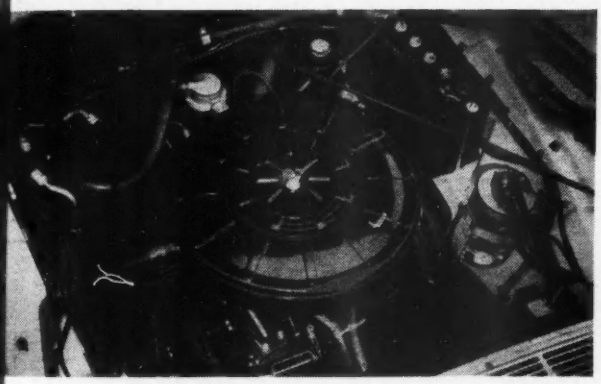
Imperial double bull's-eye instrumentation employs new electroluminescent lighting that could be more effective if not surrounded by so much distracting bright trim. Various controls, including turn indicator, are scattered.



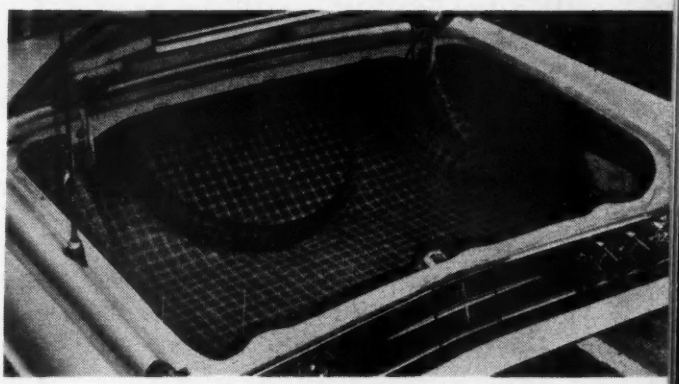
Wedge-shaped combustion chambers and slipper-skirt pistons are featured in Imperial's 413-cu.-in. engine. Full power accessories and 4-bbl. carburetor leave little vacant space in crowded but accessible engine compartment.



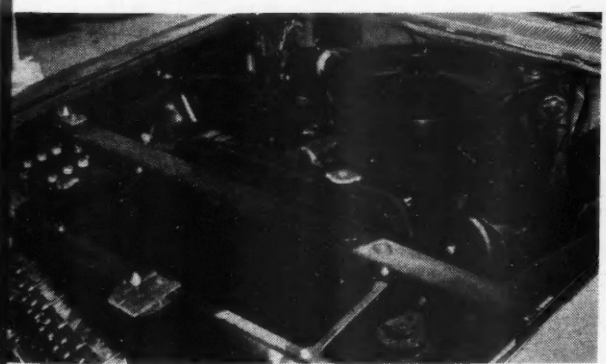
Imperial trunk is wide, deep, well finished, with easy-to-reach spare that does consume some valuable floor space. Sound insulation and rattle-proofing are carried into this area with good tire tool storage, thick floormat.



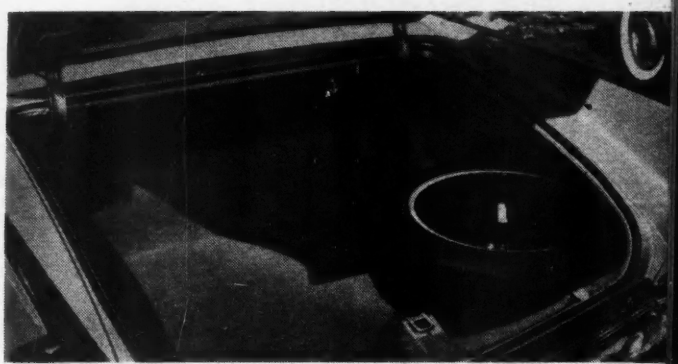
Lincoln's crankshaft-driven steering pump eliminates belt slippage and cluttering hose lines. New 2-bbl. carburetor and intake manifold replace the old 4-bbl., has built-in bi-metal valve to admit cool air, smooth out hot idle.



Continental styling is carried into luggage compartment with plaid pattern lining and spare tire cover. Angled center spare mount leaves good flat floor area but it's a long reach to remove. Covering is cemented, stays put.



Smallest engine of The Luxury Three, Cadillac's 390-cu.-in. has the highest compression ratio, 10.5 to 1, advertised hp is 325. The 345-hp powerplant used in the Eldorado Brougham is available as an option for all other models.



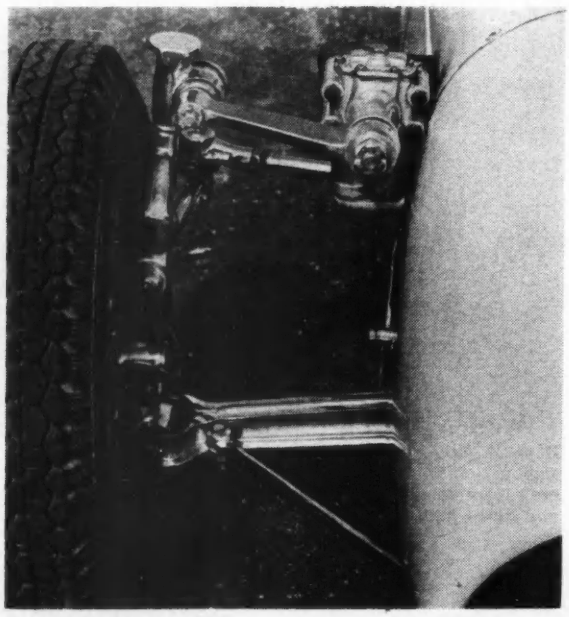
Cadillac, like Imperial, mounts spare to side for easy removal and some sacrifice of rear floor space. Tough mat is removable, has bound edges and fits well. Floor and sides have additional sealing against dust, moisture.

TWO WESTERN-BRED FORMULA JR.'S



Reno Racing Team car project successfully blends stock and custom-made parts to produce

BMC



TAKE ONE WRECKED MORRIS, one enthusiastic group headed by a veteran sportscar driver/builder, add a new class of racing (Formula Junior), and the result—one very rapid, well built, BMC-powered Formula Junior car.

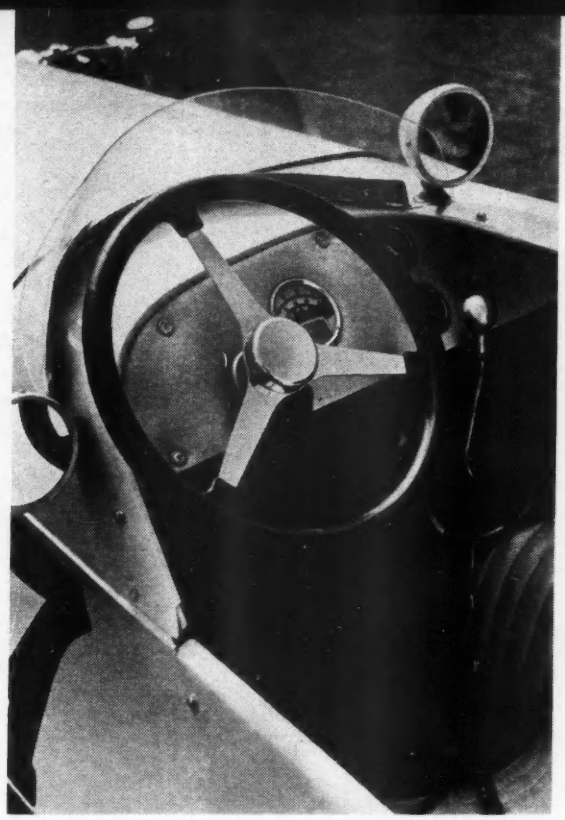
Merle Brennan and the rest of the gang, known as the Reno Racing Team, built this little 79½-inch-wheelbase bomb in just 63 days. In its first outing at the SCCA races held in Stockton, Calif., Merle placed third overall against a field of 12 Juniors, ranging from Taraschis, Stanguellinis, Elvas and several home-builts. Even with a relatively stock Morris engine displacing a mere 980cc, the combination of precision assembly, good handling and experience in the driver's seat made up the difference in power.

The space-type frame is of relatively simple design, with welded 1⅝-inch steel tubing for the main sections, and one-inch tubing for bracing and other members. A straightforward aluminum body design was chosen for simplicity of construction. Side panels are flat with the only compound curves in the nose and fiberglass tail sections.

With no troubles in their first outing, the Reno Racing Team is looking forward confidently to an active season.

—Story and photos by Pete Biro

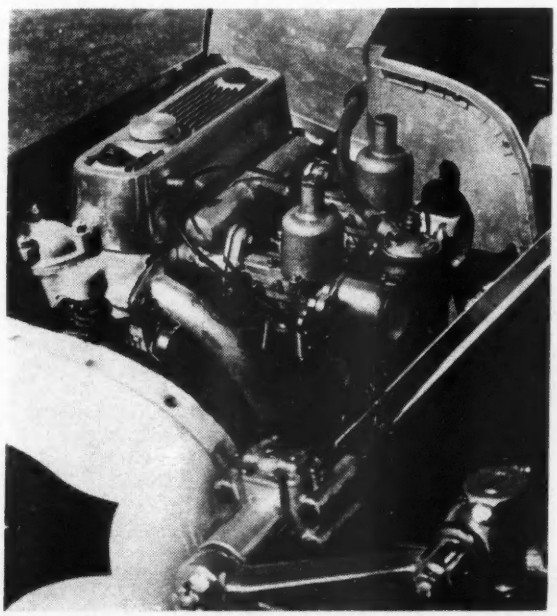
Chromed front suspension has Morris torsion bar; brake linings are Frendo. Front tread is 48 inches, the rear 43½. The 4.55 rear end is offset 6½ inches to the right.



Clean cockpit (left) has steering wheel from midget; tach, oil pressure and water temperature gauges; twin racing mirrors. Wheels are special cast alloy with integral brake drums, designed for Sprites. Front and rear tires are 5.20 x 13.

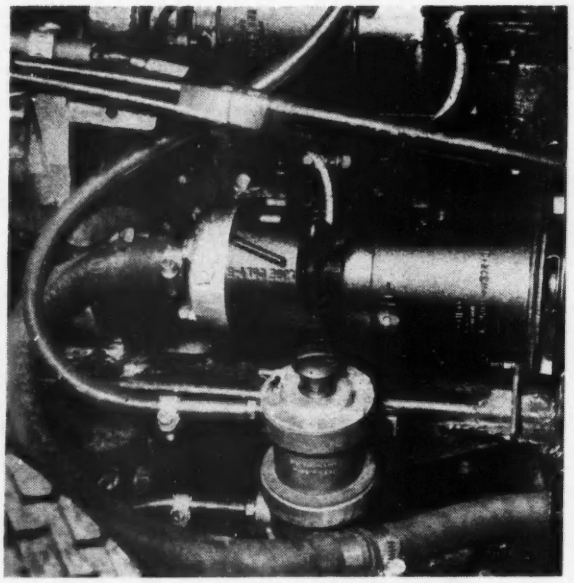


JUNIOR

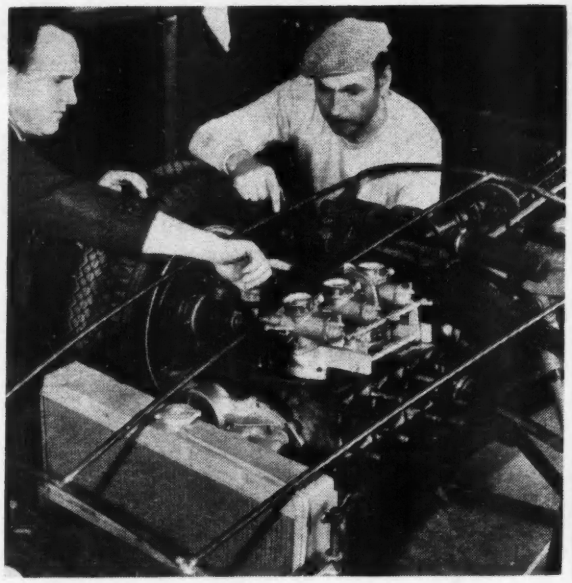




Driver/owner Merle Brennan of Reno, Nev. sits in yellow upholstered cockpit, alongside load leveler spring-shock and trailing arm rear suspension. BMC series A engine, bored .030, has two 1¼-inch SU carbs mated to fabricated intake manifold. Valve train is stock; the cam is an Isky road-racing grind. With 10 to 1 compression, Brennan hopes to squeeze out more than 70 hp.



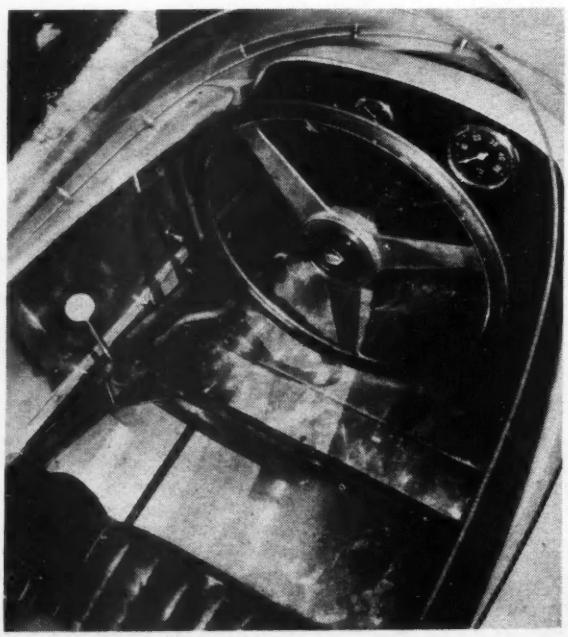
Water pump replaces thermo-syphon system, is part of a Bosch generator from which innards have been removed. Stewart-Warner fuel pump regulates float bowl pressure.



Erich Sobirey, left, DKW technician who engineered and built car, and Jack Sutton, Los Angeles body builder. Layover engine has carburetors on top, exhaust on bottom.

Stock chassis, suspension, layover engine, motorcycle carburetors are features of

DKW



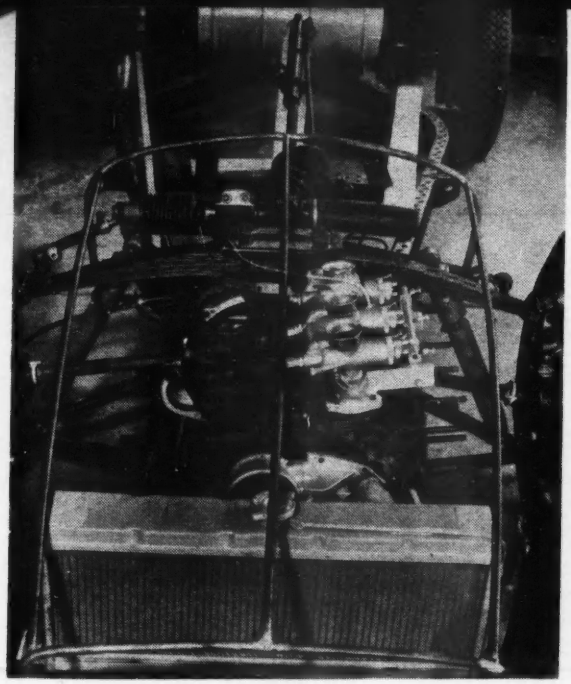
Roomy cockpit has plenty of elbow room and good wheel position. Makeshift mechanical tach was replaced by a Dixco electronic transistor unit calibrated to 10,000 rpm.

DKW TWO-CYCLE ENGINES have already made impressive marks in the new Formula Junior racing class. Most of these engines are running in special chassis using stock and fabricated components, but Erich Sobirey, Western states trouble-shooter for DKW, constructed his car around the basic frame, suspension and running gear of a DKW sedan. Though the stock frame bulges widely to accommodate a passenger car body, it is still narrow enough to accommodate a single-seater body of the maximum allowable 37.4 inches prescribed by FIA for this formula. Patience, hard work and an electric drill with a half-inch bit resulted in weight reduction some 780 holes later; the rest of the parts remain as they came from the crate.

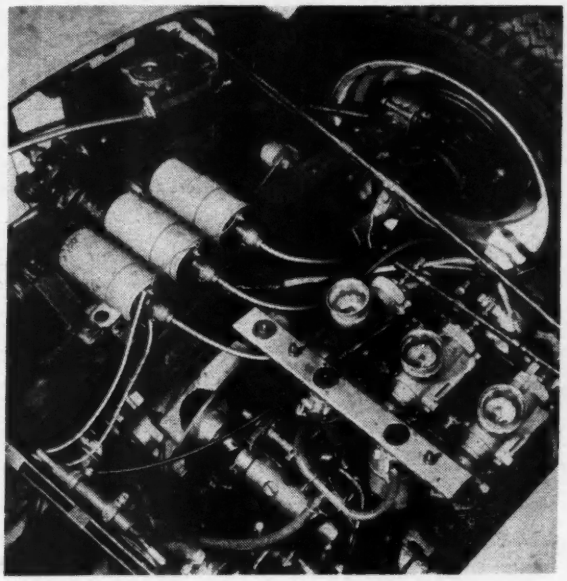
An adapter plate of $\frac{3}{16}$-inch steel to relocate the bolt pattern between engine and gearbox allows the engine to be tilted nearly flat to lower the hood line. Engine ports—enlarged, smoothed and angled lower on the intake, higher on the exhaust—give the effect of changing a cam to increase valve overlap on four-stroke-cycle engines. Stock pistons were used to fit the 1000cc engine bored out to 1080cc.

Despite the added weight of strictly stock components, the car accelerates with lighter production Junior cars and is certainly the cheapest way to build in this so-called "poor man's" racing class.

—Chuck Norpel

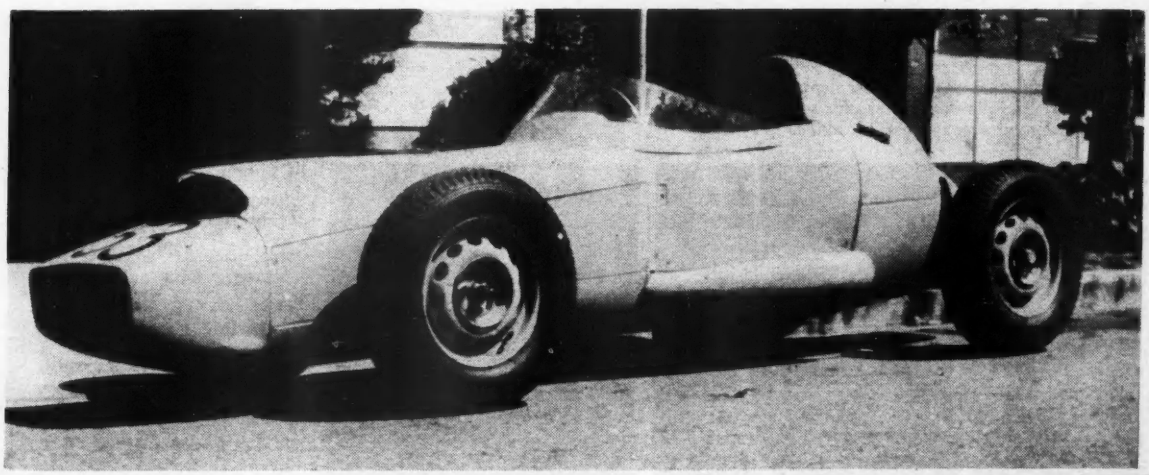


Handmade steel adapter plate between engine and gearbox allows engine to be tilted nearly 90 degrees for lower hood line. Radiator is DKW type for commercial vehicles.



Amal TT carburetors mount on a specially cast aluminum manifold and are supplied by two rubber-mounted float bowls. Points are stock but coils are heavy-duty Bosch.

JUNIOR



Body by Sutton is .051 aluminum, mounts with double Dzus for quick removal and follows lines of larger Grand Prix racing cars. Future plans call for replacing stock DKW wheels with lighter ones of cast magnesium or forged aluminum alloy.



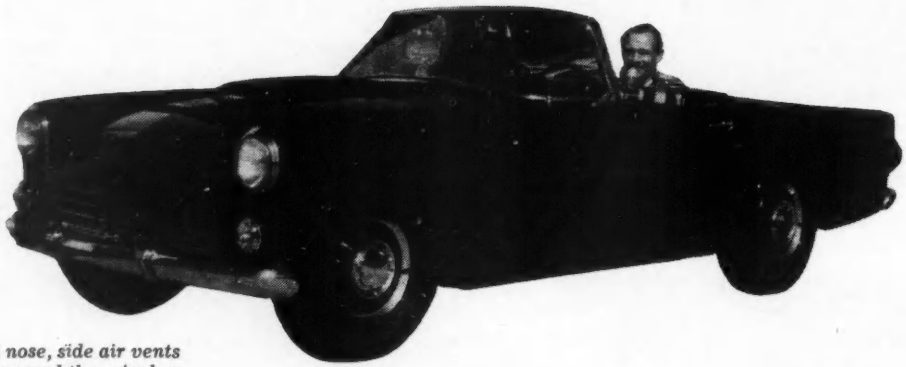
FORMER BODY SHOP OWNER Ran Wilbourn of Los Angeles wanted a personal car with new and different styling, "one that could compete with German and Italian sportscars in quality of bodywork and design." He liked the basic lines of the '55 T-Bird—but had a few ideas of his own.

Side vents added a continental flair, as did the flattened and extended hood scoop. The grille is made from three '59 Pontiac mesh units, with Nash headlights lowered and set back about two inches. Hubcaps are '54 Merc, with cast aluminum centers.

To get more room behind the seats for a shelf (which covers a spacious compartment), Wilbourn cut farther back into the rear deck. The interior is luxuriously cross-pleated in metallic green upholstery.

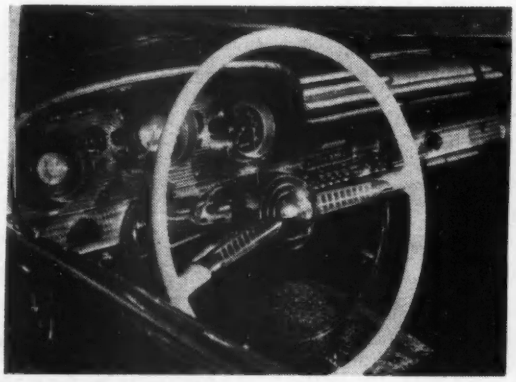
Wilbourn has drawn on his 30 years of experience in metalworking to design and build a clean custom—one that should suit any Bird enthusiast to a T.

Suits-him-to-a- T-BIRD

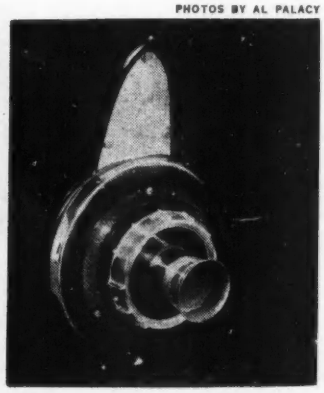


Dropped nose, side air vents and fenders lowered three inches at cutouts give car sleek new lines.

PHOTOS BY AL PALACY

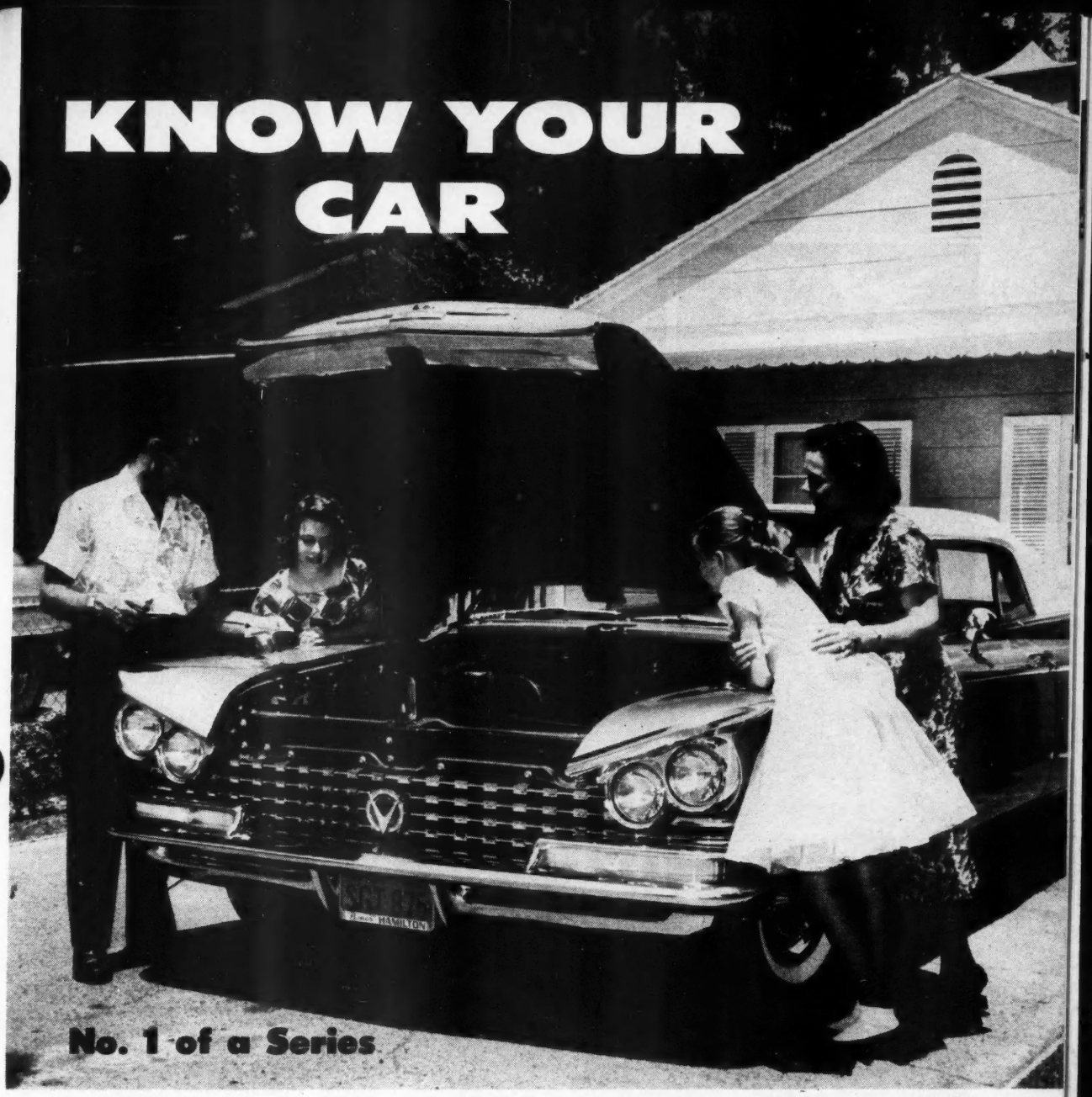


Padded cowl includes a hood from '58 Mercury instrument panel, and ashtray mounted on top.



'56 Ford tail lights, with Frenched backup lenses, have six small bulbs installed around tail pipe coming through center.

KNOW YOUR CAR



No. 1 of a Series

COLIN CREITZ

what makes it go?

by Robert W. Temple

Here is the first in a new series of monthly articles on car components and their basic functions. Each chapter will be presented in this concise, easy-to-understand pictorial style. Whether you are enjoying your first taste of automotive knowledge, or are an old hand who may welcome a brief review—this illustrated series will help you to "Know Your Car".

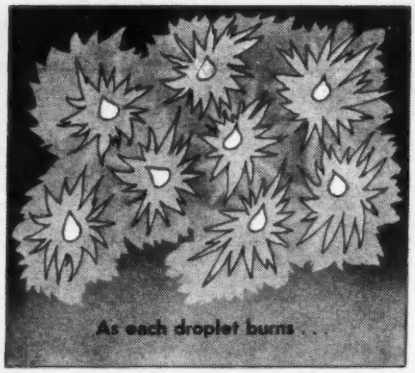
This initial chapter summarizes the fundamental operation of internal combustion engines. Following sections will cover carburetion, ignition, transmissions, steering, brakes, chassis, etc.—to give you and your family a new appreciation of the engineering marvels in your automobile.



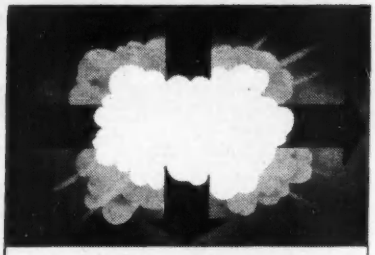
Spray gasoline into air . . .



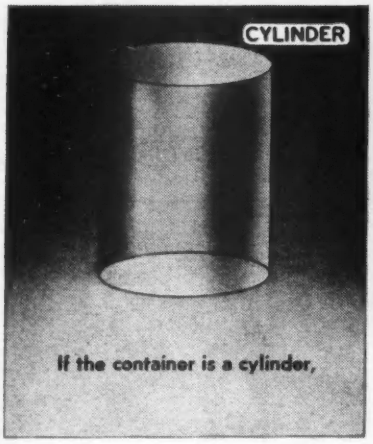
. . . then ignite it.



As each droplet burns . . .



it heats the air around it, causing the air to expand rapidly. Expansion inside a closed container results in pressure.



If the container is a cylinder,

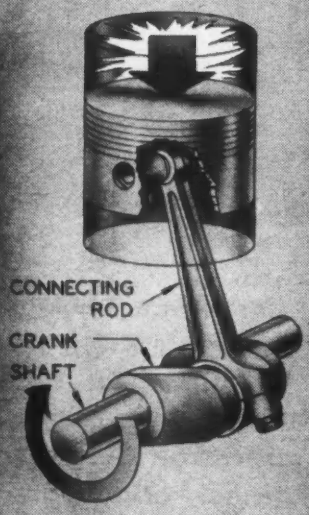


and one side is movable (a piston),



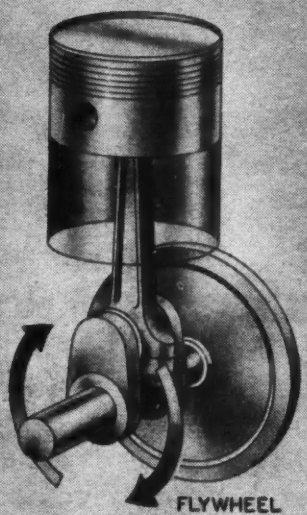
the pressure of this expansion can be put to work.

The easiest way to use this thrust is to turn a shaft.



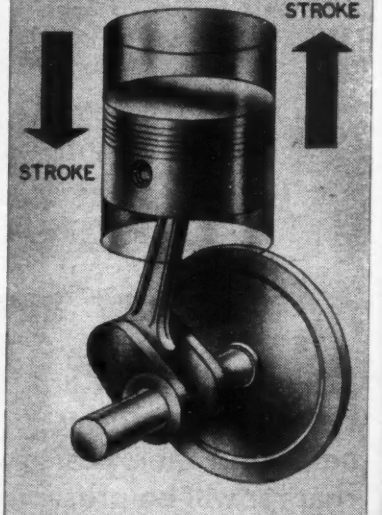
This is done by a link known as a connecting rod, which applies the thrust of the piston through a crank to the shaft.

To continue operating, the piston must return to the top after each trip down.



A flywheel stores energy from power stroke to push piston back to the top.

Each motion of the piston down or up is called a stroke.



Therefore one revolution of the crank equals two strokes, and two revolutions equal four strokes.

KNOW YOUR CAR

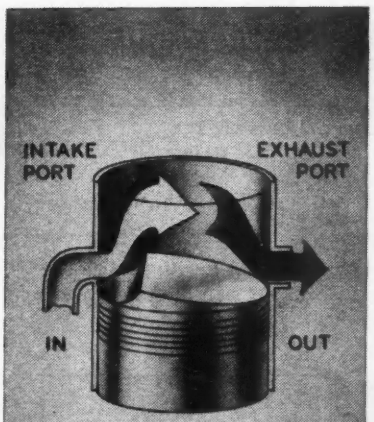
continued

what makes it go?

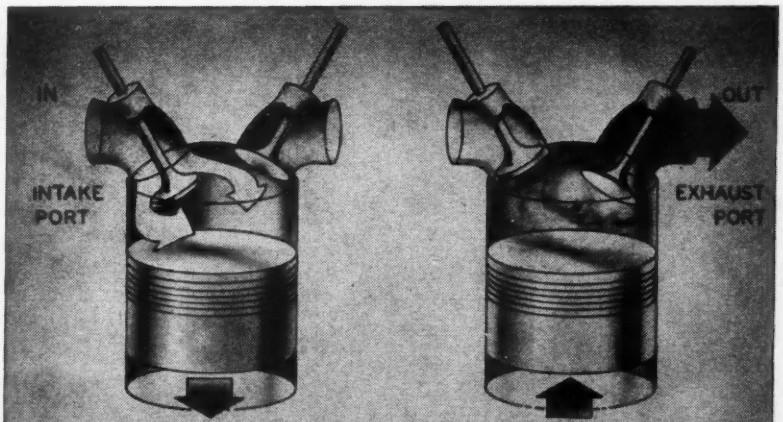
CYCLE is the word used to describe a repeating series of events. In an engine this is known as the operating cycle and refers to the process of taking in fuel, burning it and then exhausting the burned gases from the cylinder.

There are two basic types of engines which are used in today's cars. One is the "two-stroke-cycle" engine found in several imported makes; the other is the "four-stroke-cycle" engine more commonly used in cars manufactured in the United States.

An engine cylinder must have openings to admit the fuel/air mixture and to allow the burned gases to escape. These openings are the "ports." They must be opened and closed at the correct intervals to assure flow of the gases in the proper direction at the right time. In a four-cycle engine this is done by valves in the ports. In a two-cycle engine, the piston opens and closes the ports.

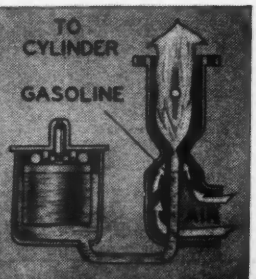


In a two-cycle engine the fuel charge is pushed into the cylinder and it in turn then pushes the exhaust gases out when the piston opens the ports.



A four-cycle engine uses the vacuum created by the descending piston to suck in the fuel mixture, and the pressure created by the piston ascending after the firing stroke to force out exhaust gases.

Carburetion is the process of mixing gasoline vapor and air into a combustible blend of proper proportions. The device which does this is the carburetor.



Ignition of the fuel and air mixture in the cylinder is done by an electric spark between the two points or electrodes of a spark plug.



KNOW YOUR CAR

continued

what makes it go?

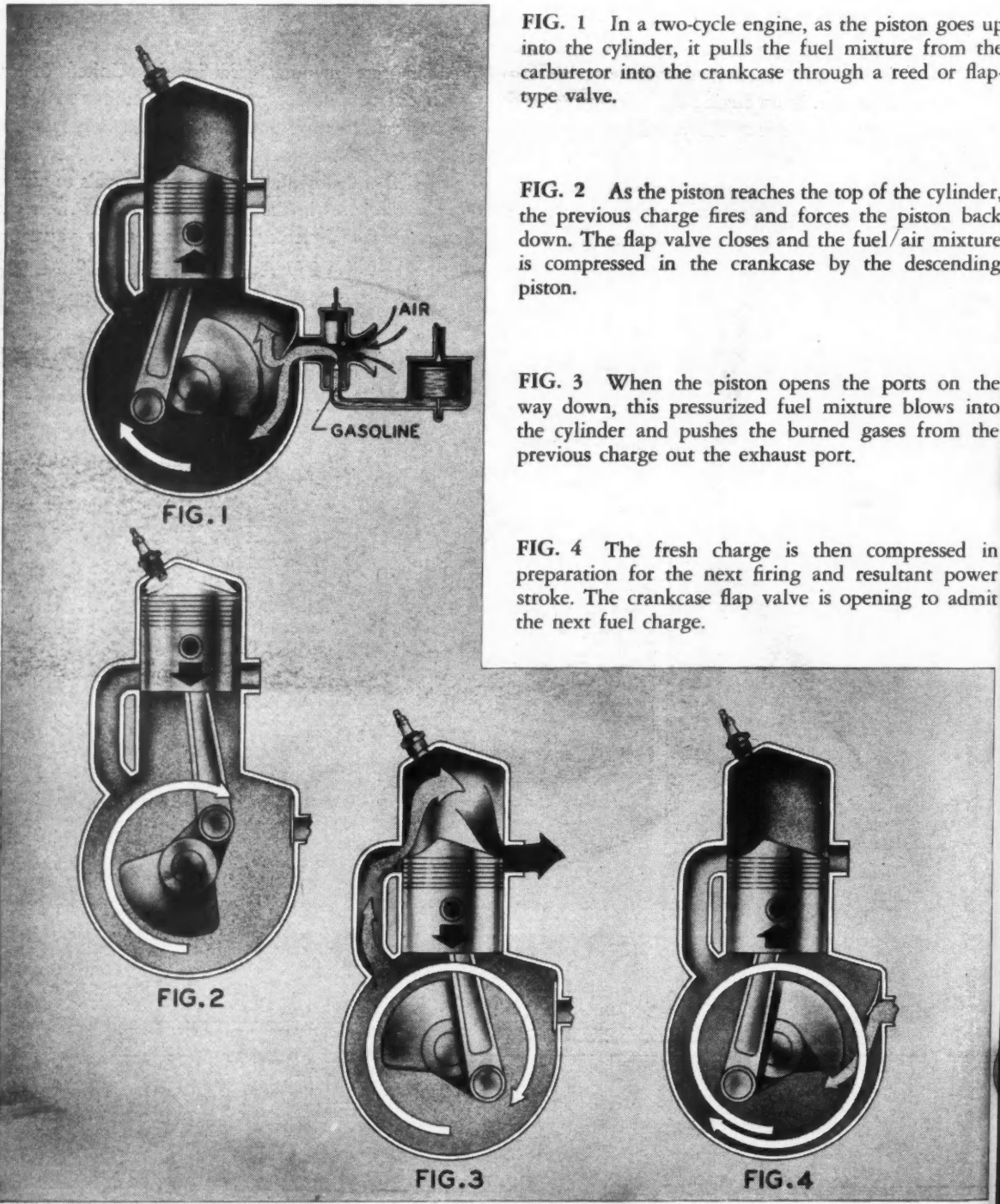


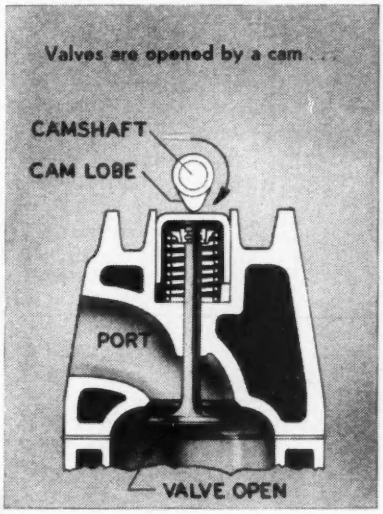
FIG. 1 In a two-cycle engine, as the piston goes up into the cylinder, it pulls the fuel mixture from the carburetor into the crankcase through a reed or flap-type valve.

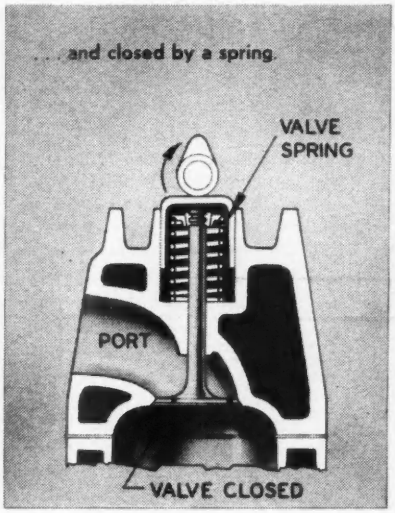
FIG. 2 As the piston reaches the top of the cylinder, the previous charge fires and forces the piston back down. The flap valve closes and the fuel/air mixture is compressed in the crankcase by the descending piston.

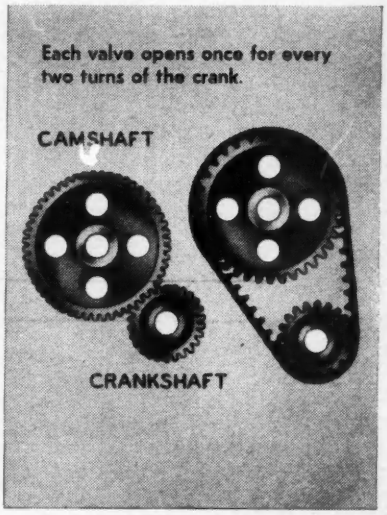
FIG. 3 When the piston opens the ports on the way down, this pressurized fuel mixture blows into the cylinder and pushes the burned gases from the previous charge out the exhaust port.

FIG. 4 The fresh charge is then compressed in preparation for the next firing and resultant power stroke. The crankcase flap valve is opening to admit the next fuel charge.

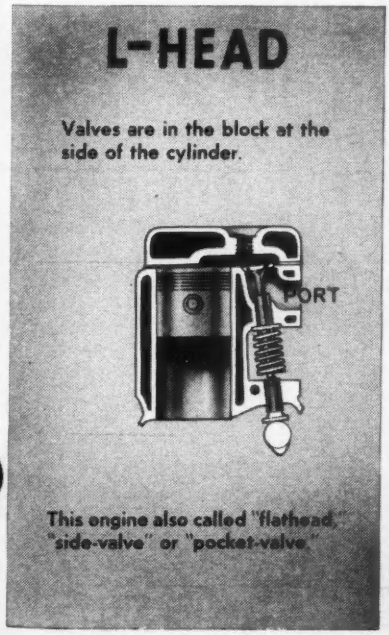
THE OPERATION of a four-cycle engine requires four strokes of the piston to accomplish the same sequence of events that the two-cycle engine does in two strokes. The advantage of this system is that the fuel charge is not diluted by exhaust gases, enabling a more pure, more explosive mixture. The disadvantage is one "dead" revolution for every "power" revolution of the engine. There is also the added weight and complication of the valves and their operating mechanism in this particular type engine.

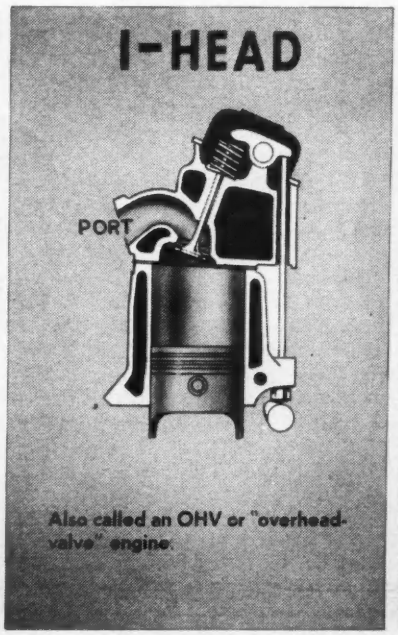


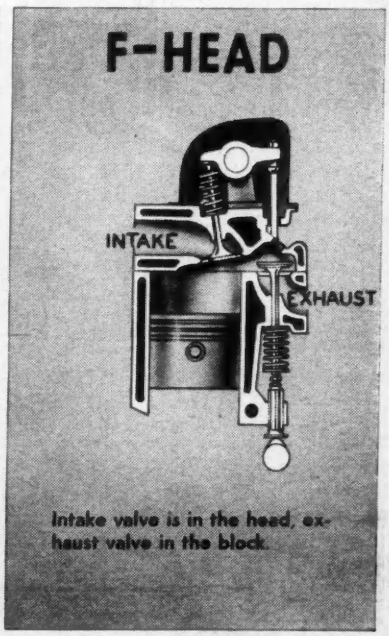




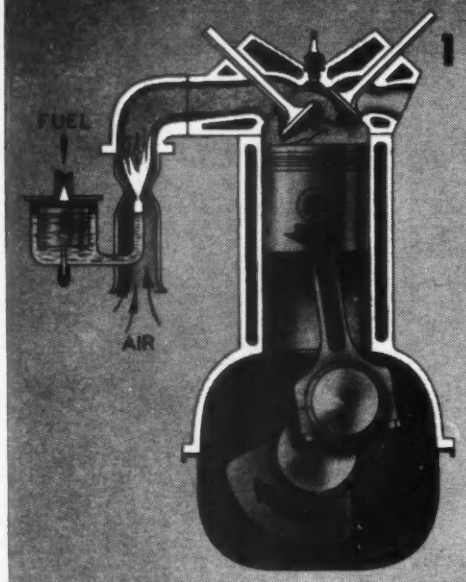
There are several different ways to place and operate the valves in a four-cycle engine. The common methods in current use are shown below.





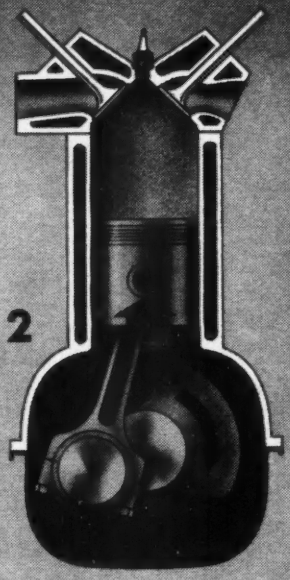


FOUR-CYCLE SEQUENCE



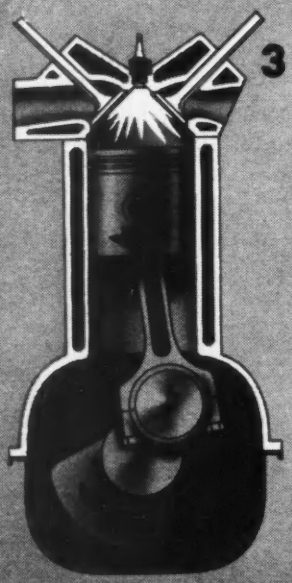
1

Descending piston pulls fuel charge into cylinder through open intake valve.



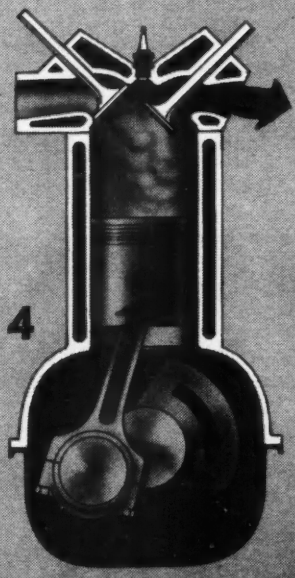
With both valves shut, the piston compresses the charge.

2



3

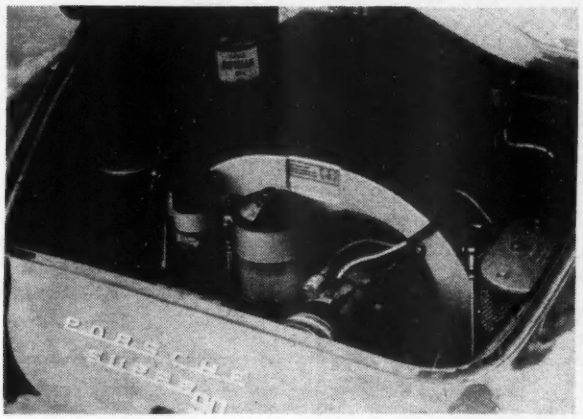
Fuel charge is fired, driving piston down.



On final up-stroke, piston forces burned gases out the open exhaust valve.

4

In next month's chapter of MOTOR TREND's "Know Your Car" series we'll study how the engine developed from single to multiple cylinders. We'll discuss engine design, lubrication systems, liquid and air cooling, and cams and valve gear. Be sure not to miss it.





Super 90 engine is the most powerful pushrod powerplant currently available for Porsche. Redesigned coupe, with higher headlights, bumpers, increased brake cooling and improved handling, has compensating spring located below swing axles.

The Most Super Porsche of Them All

"Experts" said the Porsche couldn't be significantly improved, but along came the Super 90 to embarrass them. More of everything . . . and still an all-purpose car.

by Gunther Molter

TEN YEARS OF PORSCHE PROGRESS have been little short of remarkable. We have been fortunate enough to drive every new model, summer and winter, over the twisting highways of Europe—and the Super 90 is the best yet.

Current production concentrates on the 60-hp Normal, 75-hp Super and the 90-hp Super 90. (The 115-horse Carrera GT is available on special order only. Also a series of 12 sports-racing RS-60s were sold to enthusiasts who would uphold Porsche's winning ways.) So the Super 90 is the most powerful in series production. Horsepower ratings, incidentally, are German DIN roughly equivalent to 70, 88 and 105 bhp respectively.

As introduced at the Frankfort Motor Show, all the '60 Porsches have new horizontally finned brakes with better heat dissipation, higher mounted bumpers and headlights, new steering wheel, shorter and smoother gear shifting, plus a host of minor improvements. But the bombshell was the pushrod-engined Super 90, developing its horsepower at 5500 rpm, designed to nearly equal the performance of the Carrera Deluxe at a considerably lower price.

What is it like to drive? First of all, the immediate acceleration of the 75-hp Super is still in the new engine. Then a great deal has been added to the top end so that we were able to clock a safe and comfortable 116.5-mph maximum. The engine is designed for 5800 revs over long periods with short bursts to 6000 considered practical.

The Super 90 we drove was equipped with Dunlop's new SB-5 braced tread tire which will go into production soon. This tire is a wire cord type designed to run at low pressures, much as the Michelin X. But there the resemblance stops. Tread area is greatly increased—67 per cent more than Dunlop's fine B-7 nylon tire which can be ordered with the Mercedes 220-S. Despite greater road contact, the road resistance at top speed takes only 15 hp as compared to 29 hp for the Continental Supersport. Adhesion in turns is much better with the SB-5 than with any other tire and there is no expansion at high speeds—desirable for serious rallyists. The only inherent disadvantage is felt on cobblestone surfaces where the entire car vibrates at a very high frequency. The solution to that is to stay off cobblestone streets.



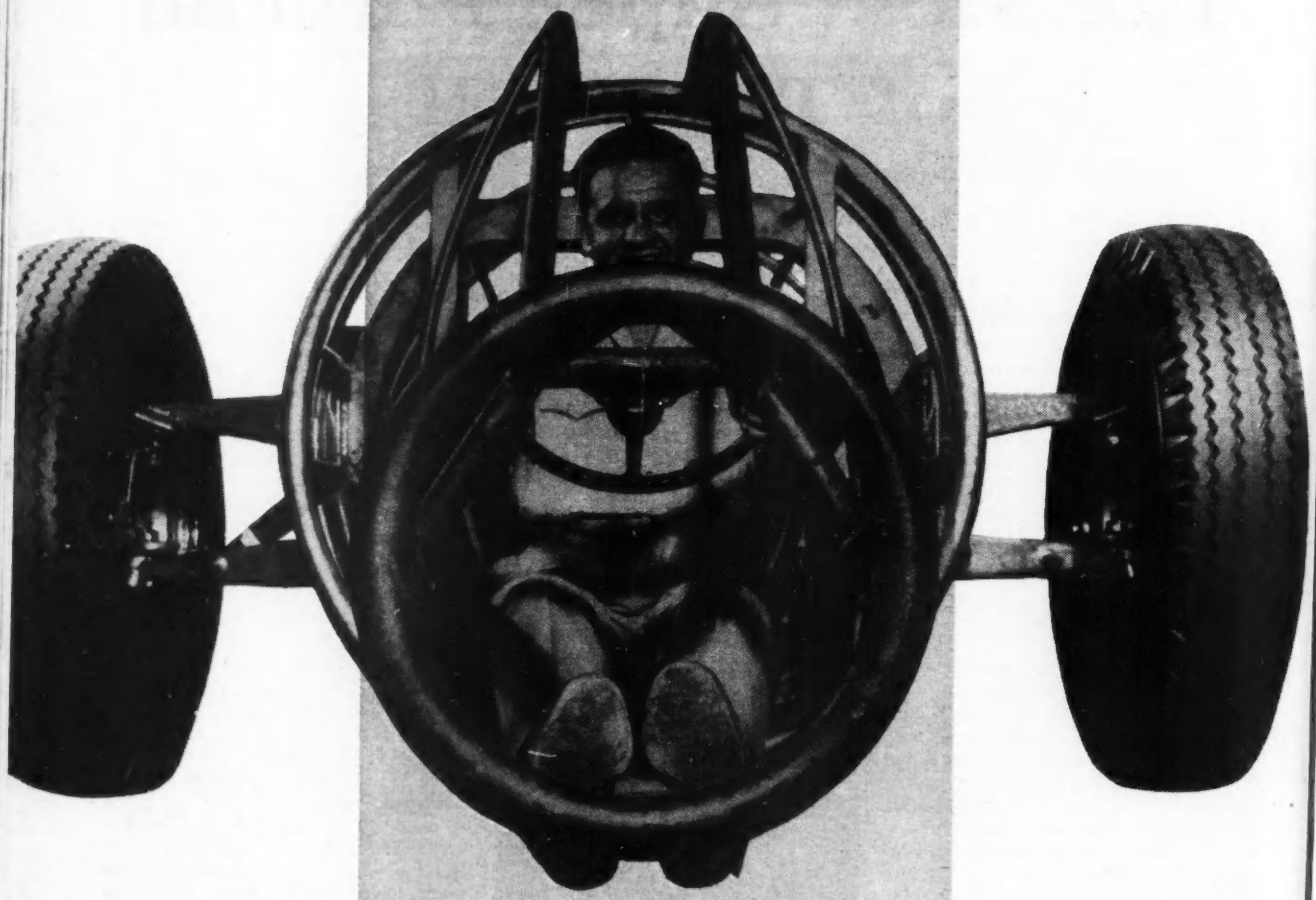
Dunlop's new braced-tread SB-5 tire, soon to go into production, is wire cord type with increased tread area.

Before the 1960 models, Porsche had a reputation for oversteer. The very first cars were notoriously bad and needed so much careful attention that the name *Heckschleuder* (rear slinger) was applied. Steering improvements were made but there was still a slight tendency to oversteer—enough so that very fast motoring was a little dangerous for the new Porsche driver. Now the Super 90 shows absolutely neutral steering. (A compensating leaf spring has been added below the swing axles.) Entering a turn too fast, the car holds its line and doesn't break away. An additional virtue is the lack of roll. And there is no difference in handling when driving a series of fast left- and right-hand turns.

Recently, after driving the new Mercedes 220-S, I commented that I had never before driven a car with such fine roadholding and "driving culture"—a combination of handling and steering characteristics, suspension, seating position, relation of driver to steering wheel, pedals and gear lever, and visibility. Now I honestly believe that the Super 90 is even better. Seating, for example, is exactly on the center of gravity. The spine is so beautifully supported that it feels as

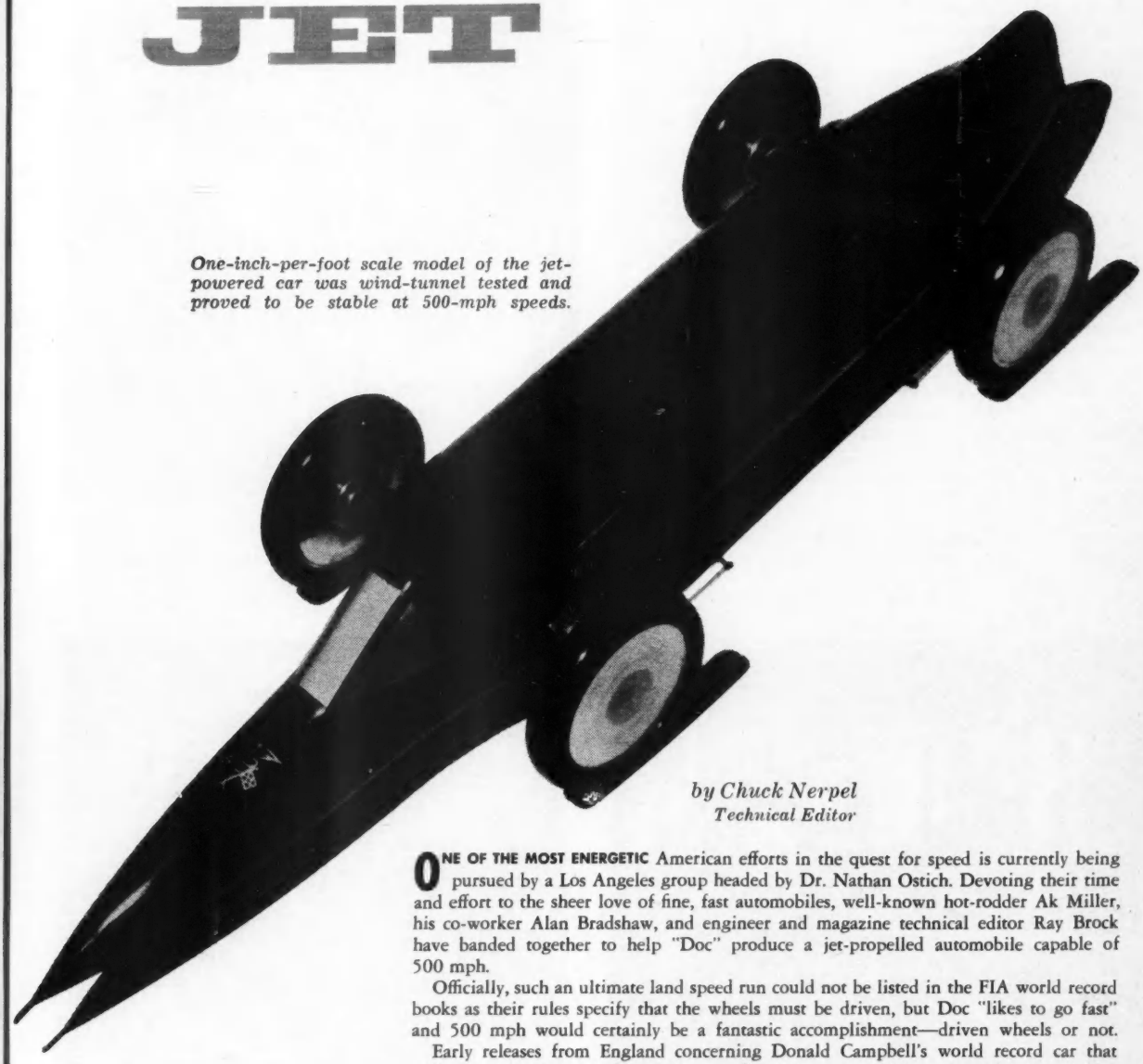
continued on page 81

Big Blast for BIRDCAGE



Surrounded by a maze of steel tubing that forms the frame of his jet-propelled car, Dr. Nathan Ostich tries driver's position.

Bonneville JET



One-inch-per-foot scale model of the jet-powered car was wind-tunnel tested and proved to be stable at 500-mph speeds.

by Chuck Nerpel
Technical Editor

ONE OF THE MOST ENERGETIC American efforts in the quest for speed is currently being pursued by a Los Angeles group headed by Dr. Nathan Ostich. Devoting their time and effort to the sheer love of fine, fast automobiles, well-known hot-rodder Ak Miller, his co-worker Alan Bradshaw, and engineer and magazine technical editor Ray Brock have banded together to help "Doc" produce a jet-propelled automobile capable of 500 mph.

Officially, such an ultimate land speed run could not be listed in the FIA world record books as their rules specify that the wheels must be driven, but Doc "likes to go fast" and 500 mph would certainly be a fantastic accomplishment—driven wheels or not.

Early releases from England concerning Donald Campbell's world record car that will run at the Utah salt flats this year indicate that a jet turbine engine driving all four wheels will supply the power. The money, nearly $700,000, has been furnished by a large group of automotive and related concerns, including Dunlop, who have developed the tires.

The Ostich car, all 6000 pounds of it, will not cost even a small fraction of that spent on the Campbell project, as it is a labor of love, practical know-how, do-it-yourself, and the availability of good, relatively cheap surplus aircraft parts, including J47-19 GE turbo-jet engines.

Development of tires and wheels for this contemplated speed was taken on by Firestone Tire and Rubber Co., who decided that a 48-inch outside diameter tubeless tire with nine-inch cross-section, mounted on a forged aluminum wheel with integral hub

continued

BIRDCAGE

continued

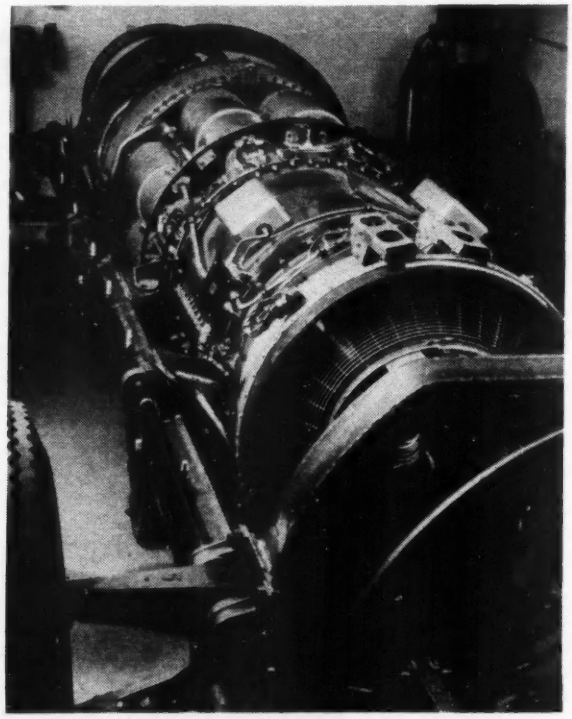
could not only do the job but would be built and tested for 600 mph "just to be on the safe side."

Basically, the frame consists of a mild steel "birdcage" composed of round and rectangular tubing electrically welded together to form a cross-section of circular shape just a few inches over 28 feet long from needle nose to thrust tube tail. The entire framework will be covered with an aluminum skin but the wheels will be left open; fairing them into the body shell would result in a cumbersome shape of great bulk and frontal area due to the 84-inch track.

Ray Brock, who designed the frame and chassis, selected Chevrolet truck components for his suspension and steering. Lower A-arms and spindles from a ¾-ton truck combine well with upper A-arm and torsion bars from a 2½-tonner, and provide adequate strength and easy adjustment for jacking weight to trim the car. As front spindles are used at the rear, a V-shaped bar was designed and mounted so that rear wheel toe-in could be adjusted to the fine point of alignment necessary at high speed.

Wind drag, the big factor to overcome on speed runs, will be put to use to stop this vehicle. The electronic brain at Firestone's missile division has shown that the 5200 pound thrust of the turbo-jet engine is more than enough to propel Doc's blasting "birdcage" to the desired 500 mph in a relatively short distance. Once the power is cut, a wind drag force of about 1-G will decelerate the car to 300 mph, when a ribbon parachute will be released to slow to braking speed of 175 mph. Double Halibrand spots with 14-inch discs will take over and bring the car to a final halt, well within the six to nine miles available for stopping.

If the Doc hits 500 mph—record or no—he will definitely prove the Jet Age is here . . . on the ground as well as in the air.



GE turbo-jet J47-19 engine, one of two purchased from government surplus, is capable of 5200 pounds of thrust, conforms nicely to the circular cross-section of frame.



Heavy-duty Chevrolet truck parts are used for both front and rear suspension with adjustable one-ton truck torsion bars. Rear suspension, which employs front wheel spindles,

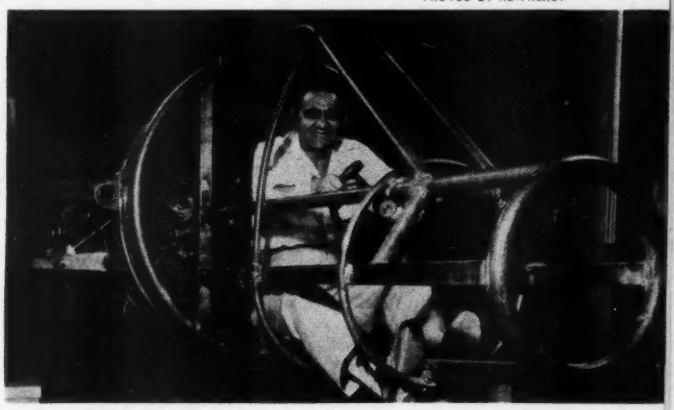


has tubular V-bar that prevents wheels from steering but allows accurate alignment. Torsion bars outside of frame will be faired into the body with streamlined coverings.

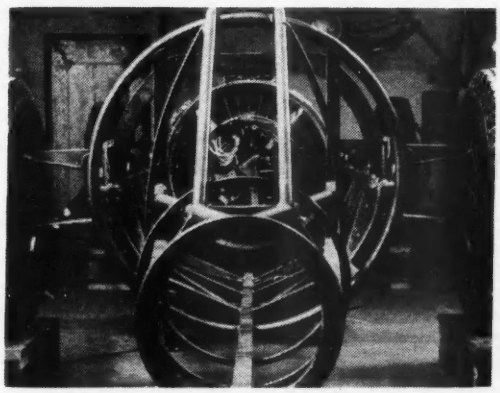
PHOTOS BY AL PALACY



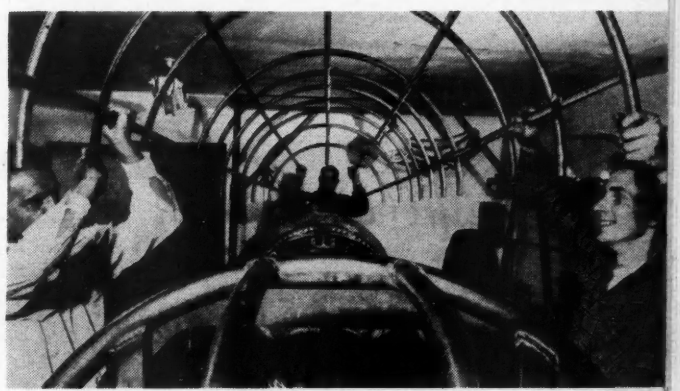
Firestone engineers put the finishing touches to prototype of wheels and tires they developed for jet car. Forged aluminum wheel weighs 160 pounds.



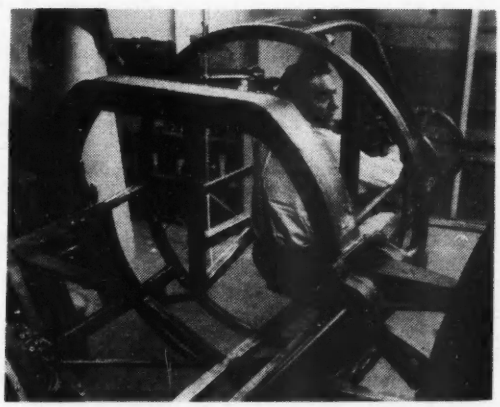
Spun-metal cone with air speed indicator tube housed in needle nose slips over small forward frame rings, completes streamlined shape, and acts as aiming point.



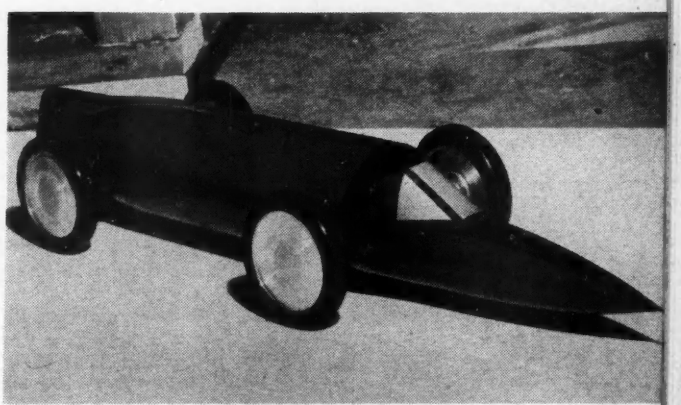
Maximum strength and driver protection are afforded by series of circular and lateral "roll bars" that comprise frame. Heavy wall tubing is machine bent.



Ostich, Brock and Bradshaw lift framework of top hatch that allows access to innards of the big turbo-jet engine. Hand-formed aluminum body will be riveted to steel frame.

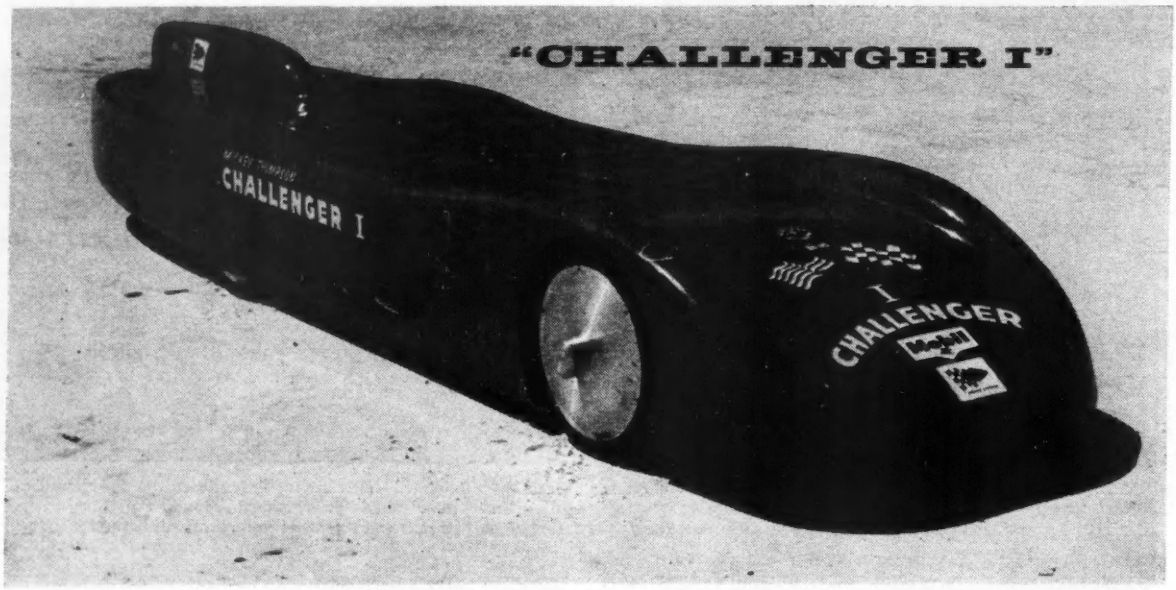


Area between driver and engine will house split air duct and fuel tank. Tires and wheels shown are just for construction until special Firestones are ready.

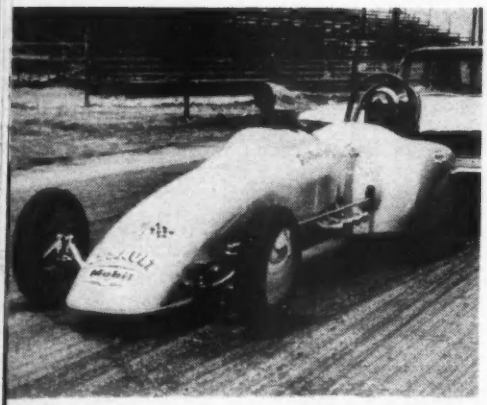


Original design had rear stabilizing fin but wind-tunnel test of one-inch-per-foot scale model indicated strong side-to-side forces that would make control very difficult.

Mickey Thompson's



Thompson's streamliner will have slight body changes, supercharged Pontiac engines for another attempt at 400 mph.





Bonneville *continued*

MICKEY THOMPSON, who was about 38 mph short last year of the magic 400 necessary to break John Cobb's world record, has not been idle during the winter months. Special castings to adapt GMC 671 blowers to Pontiac engines will soon be ready to bolt onto his four-engined Challenger I. With minor body changes to accommodate the extra hood height, Mickey will take another crack at Cobb's record at Bonneville in August.

A mass of energy, Thompson found time between modifications on the Challenger and managing a very busy Long Beach dragstrip, to design and build a single-engined car for a try at breaking standing-start kilometer and one-mile records. The Assault, as his streamlined dragster is called, was designed to run in three separate engine classes, and will require an engine change for each class.

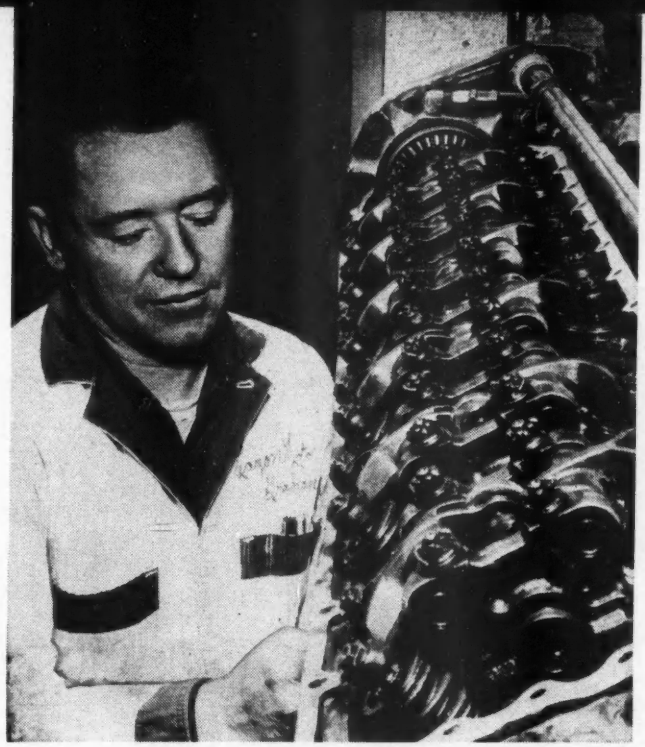
Present Class A record for the standing-start kilometer was set by Cal Rice in 1958 at 18.10 seconds e.t. at an average speed of 123.56 mph. Rice's times also set a new Class B record as both runs were made with a Class B engine. Ed Cortopassi holds the 1958 Class C records of 19.21 e.t. and 116.43-mph average speed.

For his try at new class records, Thompson used Pontiac engines, supercharged with GMC 671 blower, Hilborn fuel injectors and nitrated Mobil racing fuel blend. The Class A engine displaces 490 cubic inches; the Class B, 412; the Class C, 303. Each engine has been set up and tuned on a dyno and Mickey and crew figure it will take about an hour to make the change. No gearbox is employed, and rear axle ratio is 2.70 to 1.

Taking advantage of the Air Force permission to use the 13,000-foot jet landing strip at March Air Force Base, USAC set up the necessary timing lights to clock Mickey in both the standing-start mile and kilometer. Hitting close to 235 mph at the end of the mile, Thompson and his car set a new unlimited mile average of 149.23 mph, a Class A kilo record of 132.94, and, of course, the 149.23 was also a new Class A record. With a smaller Class B engine his new record times were 132.71 for the kilo and 149.93 for the mile. Assault on Class C records ended when his small engine blew during warm-up runs.

Built primarily as a rapid accelerating machine, Mickey still thinks he might take it to the Salt for the Bonneville Nationals the last week of August.

Single-engined dragster broke Class A, B, and unlimited standing-start record for the kilometer and the mile in recent USAC-timed runs at March Air Force Base landing strip. Engines were supercharged, fuel-burning, fuel-injected Pontiacs.



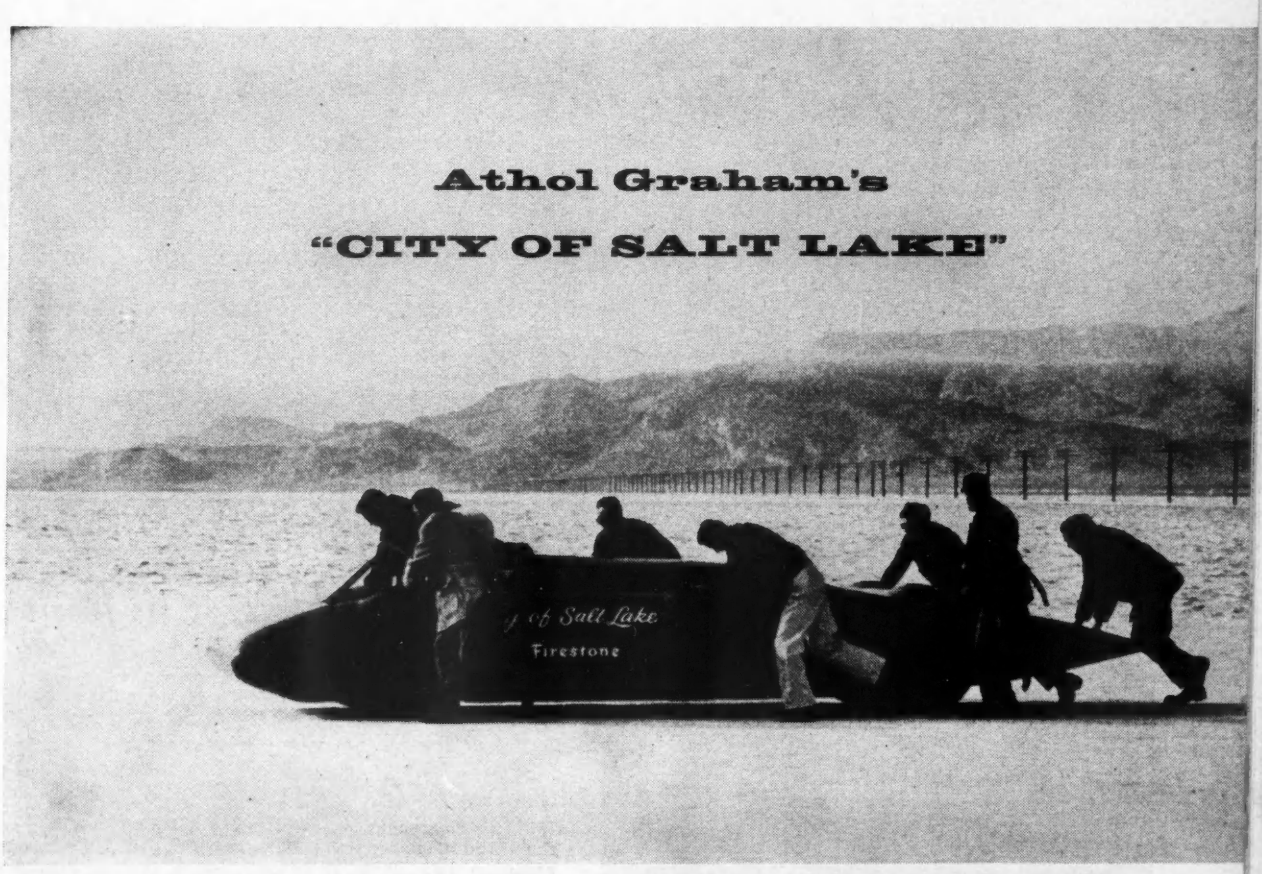
Athol Graham makes final adjustments to rocker arms of the big Allison engine that powers his streamliner, "City of Salt Lake."

ATHOL GRAHAM, Salt Lake City garage owner, has reserved the Bonneville Salt Flats for August 1 to 4 and requested USAC timing for a series of speed runs in his single Allison engine powered streamliner.

Graham's runs in the 350-mph-plus bracket late last year aroused the interest of Firestone. While his previous runs were made on special Firestone Bonneville tires, Graham and the tire people were a little concerned about the truck wheels on which they were mounted. Tests at the Akron proving grounds indicated that while the wheels were "surprisingly good," they did not provide much margin of safety at the anticipated 400 mph. With forged alloy wheels from Firestone and a real sharply tuned engine, Graham is going to have another crack at the world land speed record with his present car before "going back to the drawing board."

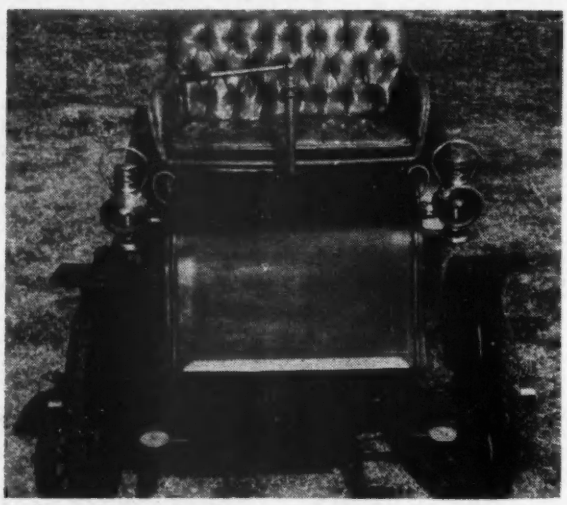
Graham has spent the winter smoothing up the streamlined body and installing a fire detecting and extinguishing system in the engine compartment. A hinged engine compartment hatch to replace the old bolt-on method will facilitate plug changes, minor engine adjustment, or any rear end work that might be necessary in the hour interval allowed between two-way record runs.

Graham feels confident that the new tires and dry salt will give him a chance to use full engine power setting without the wheelspin that cut his speed on previous runs. If this fails, he has a "completely new car in mind, ready to build."



Willing hands from a host of his friends and home towners will push Athol Graham's single-engined home-built car onto the Bonneville Salt Flats early in August for another attempt to break the late John Cobb's world speed record.

1902 PIERCE MOTORETTE

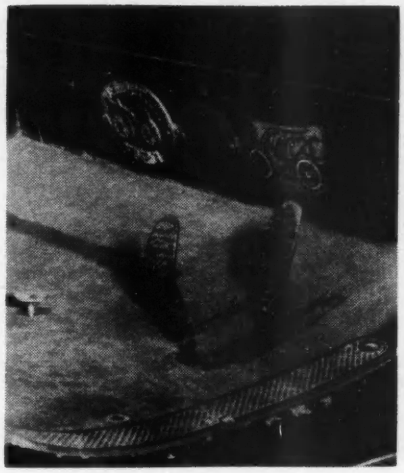


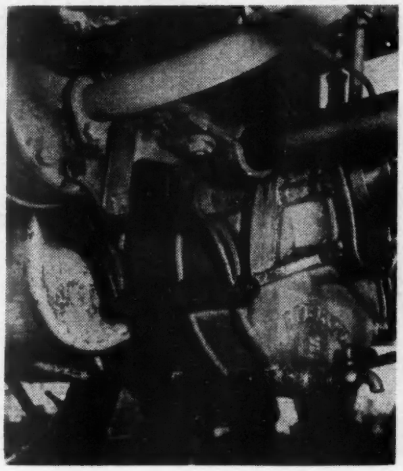
Turn-of-the-century tourer with a rumble seat in front

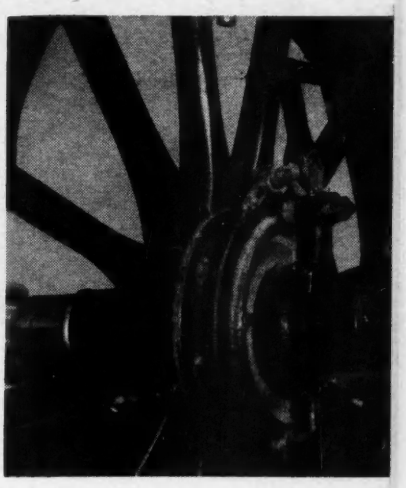
by Robert J. Gottlieb Classic Car Editor

PHOTOS BY AL PALACY

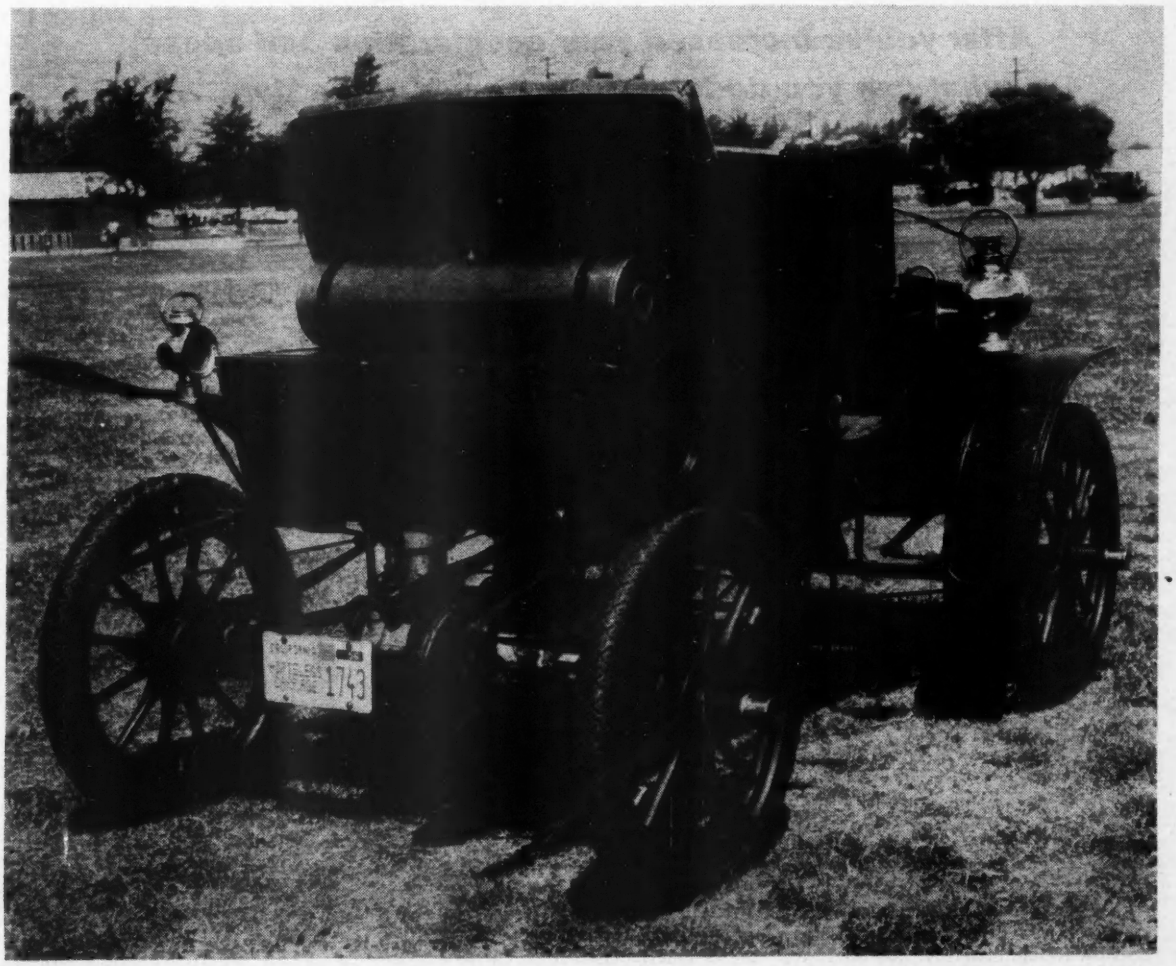
With his right hand on the steering tiller and his left on the throttle, owner John Carra of Van Nuys, Calif. sits ready to take three passengers for a spin—if two are willing to sit up front and ride with a back-seat driver!







The two floor pedals are the brake (right) and reverse. Step on the nearby button and you activate the pedestrian warning device—a loud, clear bell. The engine—bolted directly to the tubular frame—develops eight hp and a top speed of 27 mph from its single cylinder. The one-banger vibrates like a bucking bronco, but the elliptical buggy springs separating the wooden Stanhope body from the chassis absorb the vibration. Brakes consist of brass shoes against steel drums. There is no brake lining—you just machine new shoes. The well-treaded 30x3 Firestone tires are only 12 years old, but the paint job goes back to 1925; the coil is the original one.



What looks like a Continental kit for a bedroll is actually a copper water tank. Protruding tube is carburetor air intake which pre-heats the air as it passes through the heated water. Starter crank can be seen in front of right rear wheel.



GETTING MORE ~~GO~~ STOP!

After you've increased your acceleration and speed, what can you do to shorten deceleration time...?

by Chuck Daigh

In this third and final article of a special series, race driver Chuck Daigh discusses ways to improve the braking on your car, so that it can more safely handle the improved performance resulting from springing and handling modifications outlined in the previous two articles.

PEOPLE WHO ARE INTERESTED in cars and in driving become quite familiar with most of the capabilities and limitations of their own car. It is fun to see how fast your car can accelerate, or how it handles on a winding road. However, it is not particularly interesting or enjoyable to investigate how well your car stops.

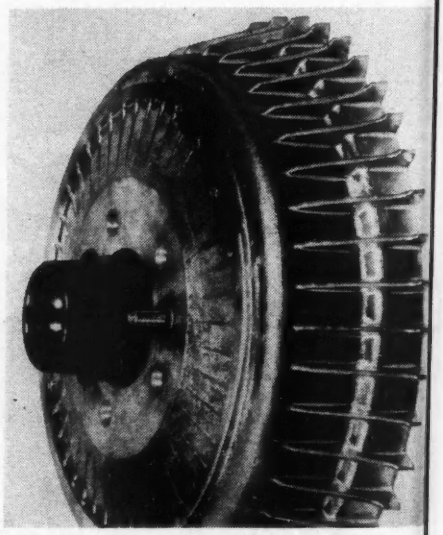
Of the relatively few people who have experienced brake fade and recognized it as such, most have only a vague idea of what types of driving situation are likely to bring about a recurrence of this failure. The average person is probably justified in this lack of concern with hard braking performance; the chances are statistically slim that he will ever have an accident due directly to his brakes "going out."

For the performance-minded person, however, the capabilities and limitations of his brakes should assume far greater importance. For not only is this person likely to have purchased a fast car to start with, but he probably uses far more of his car's speed and acceleration potential than does the average driver. He may even have been applying some "Get More Go" articles to the engine! These factors can all combine to make braking performance requirements up to four times greater than those of the average driver. . . .

THERE ARE FOUR BASIC FACTORS in brake performance: Physical size of the shoes and drums, the airflow through and around the brake, the type of lining, and the adjustment necessary for proper application of the shoes.

The size of your brakes is very important. By size of brake we mean number of inches of lining area and the size of the drum. A car rushing along at 60 mph or so is a large mass possessing a tremendous amount of energy. Bringing this mass to a stop with your brakes involves converting all this energy to heat. The ability of your brake to absorb this sudden input of heat is as important as its ability to dissipate it over a somewhat longer period of time. The smaller a brake is, the higher a temperature it will reach with the same heat input, and vice versa. It is this important heat-absorption property which is a direct function of the size of the brake. Since high temperatures are to be avoided, the installation of larger brakes is the first step toward a fade-proof system.

THERE ARE MANY MAKES OF CARS currently offering larger or heavy-duty brakes as optional equipment. Of these units, the General Motors aluminum-finned drums are definitely outstanding, but if adaptation to your car seems overly difficult, remember they are but one of many possibilities. If your car is one of a wide range of models that have been used by state highway patrols, there is a very good chance that you can duplicate the heavy-duty brake assemblies most of these cars have. In almost all of these cases, the bigger brakes are simple adaptations of stock



Finned aluminum drum with steel liner, offered as option for most GM cars, provides maximum cooling, wide lining. Slotted wheels improve air circulation.

components from the next larger car in the line of the parent corporation.

As a general rule, when looking for larger drums, look for increases in width, staying with your stock diameter. There are many reasons for this. In the first place, your are better off staying with the stock backing plate and changing other parts. Secondly, although it is not obvious theoretically, it is nevertheless true that increases in diameter do little, if anything, to improve the performance of the brake at high speed. Any of the new drums with the large-diameter extended flange is a big improvement.

The larger the brake, the more energy it will absorb before it reaches a certain temperature. A brake must be capable of dissipating most of this heat before it is called upon to make another stop. If the brake does not cool down between applications, it is obvious that a series of applications will just keep raising the temperature until the brake fades.

HEAT DISSIPATION IN A BRAKE is dependent largely on the airflow through and around the brake. In considering the airflow around a brake, the basic principle of a centrifugal fan must be kept in mind; any air impinging on a spinning brake drum will be thrown outward from the hub. It should be evident that air directed on the outer diameter of the drum will simply bounce off. Air must be introduced at a smaller radius than the drum in order for it to flow over the drum as it is thrown centrifugally, carrying heat away with it.

If your wheel is of closed configuration, then naturally you cannot expect to get any air from that side of the brake. If, however, your wheel has openings that could conceivably feed air through to the drum, don't block these openings with a plain hubcap; try to find one of the new vented fan-type hubcaps that will fit your wheel. While we are mentioning wheels, it is interesting to note that a given brake inside a 15-inch wheel will show more resistance to fade than the identical brake on the same car inside a 14-inch wheel, because of the decreased space around the drum for airflow.

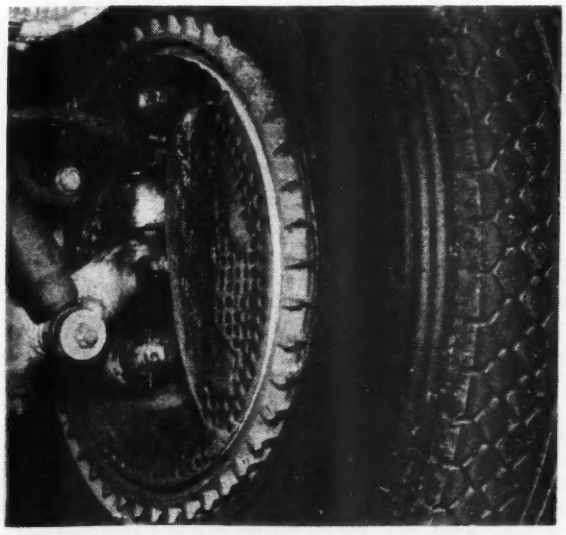
THE BACKING PLATE is the most obvious and reliable area for the introduction of air to the brake. The simplest method of doing this is to drill a few holes in the backing plate itself. This is usually quite sufficient for the rear brakes, which have considerably less braking load than the front brakes. In front the most effective and sanitary method is to pipe some air from the heater and ventilation ducts located next to the radiator. Be sure you pick up this air at a point that is in line with the blast of air from the grille opening. Use heater hose of approximately 1½-inch diameter, piping it into the backing plate in any area where it won't interfere with suspension and steering movements.

The cool air introduced through the backing plate is to be drawn out through strategically located holes in the drum. They are to be 3/16-inch holes drilled radially, or perpendicular to the surface of the drum. These holes are to be placed approximately one inch apart and staggered so as to crisscross back and forth across the entire contact width, or rubbing surface, of the drum. Be sure to countersink and de-burr the holes where they break through the rubbing surface. If this normal precaution is observed, you will find that the lining will keep the edges rounded off these holes, rather than the holes scoring the lining. These holes will perform a double service. In addition to pulling cool air through the hottest part of the brake the instant the brakes are released, they will prevent any build-up of slippery lining dust.

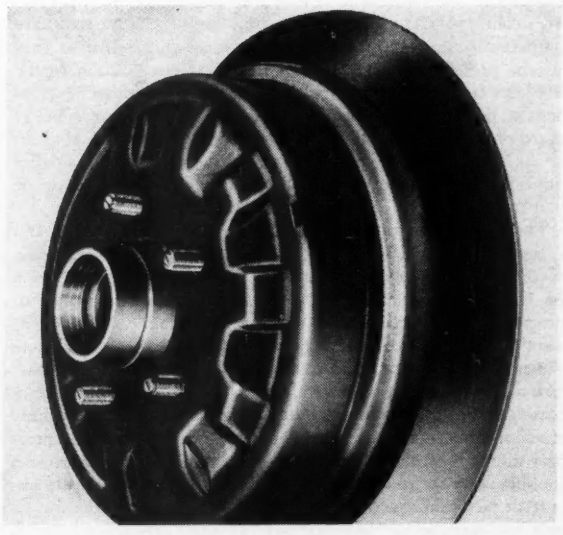
RESISTANCE TO FADE is dependent mostly upon how hot a brake lining can run before it loses its frictional properties. We have been discussing methods of lowering the peak operating temperatures of your brakes, but equally effective is the approach of changing to a lining which can run hotter.

Never settle for anything less than a top-grade domestic lining, in any case. Beyond this, of course, is the possibility of using a competition lining, or a Cera-Met. The former step is to be approached with caution, for these linings are just what they claim to be—competition, and not intended for street use. Let's consider the type of high-performance linings you should look for—we'll attempt to help you avoid the major pitfalls.

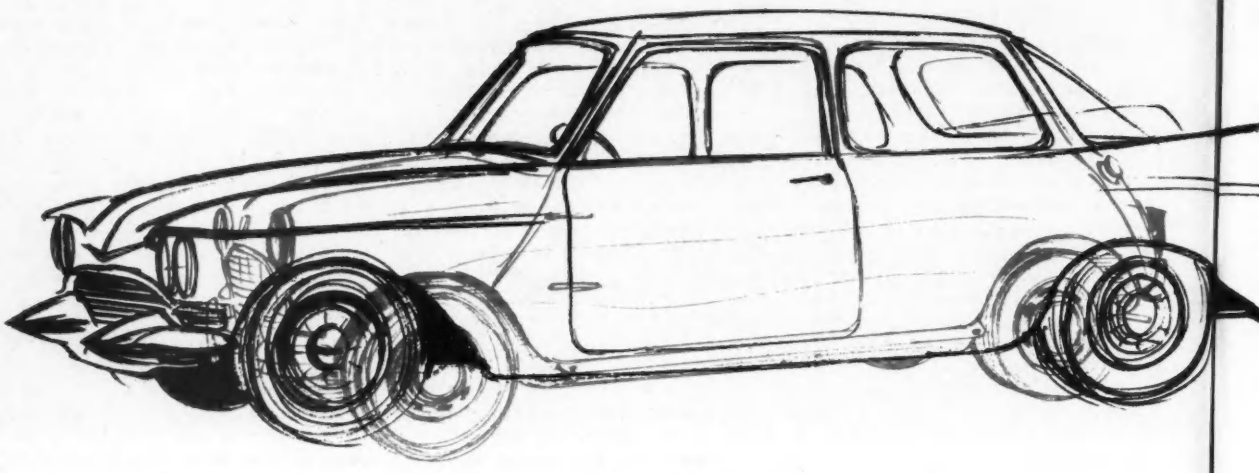
continued on page 78



The ultimate in brake cooling combines finned aluminum drum, drilled backing plate and airscoop, such as used on sports-racing cars. Scoop can be replaced with duct piping frontal air from heater intake behind the grille.



Large, extended flange cast integral with drum increases heat dissipation area and steers cool air over braking surface. Drums of this type can be made to run cooler by drilling the backing plate and lining contact area.



The Small-Small Car... Detroit's Big New Idea?

With the popular acceptance of the compacts, are U.S. designers thinking "smaller" and seriously considering small-small cars to compete with the leading imports?

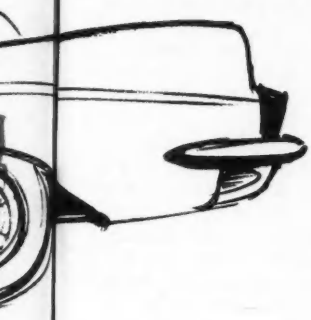
Story and Illustrations by Bob Cumberford

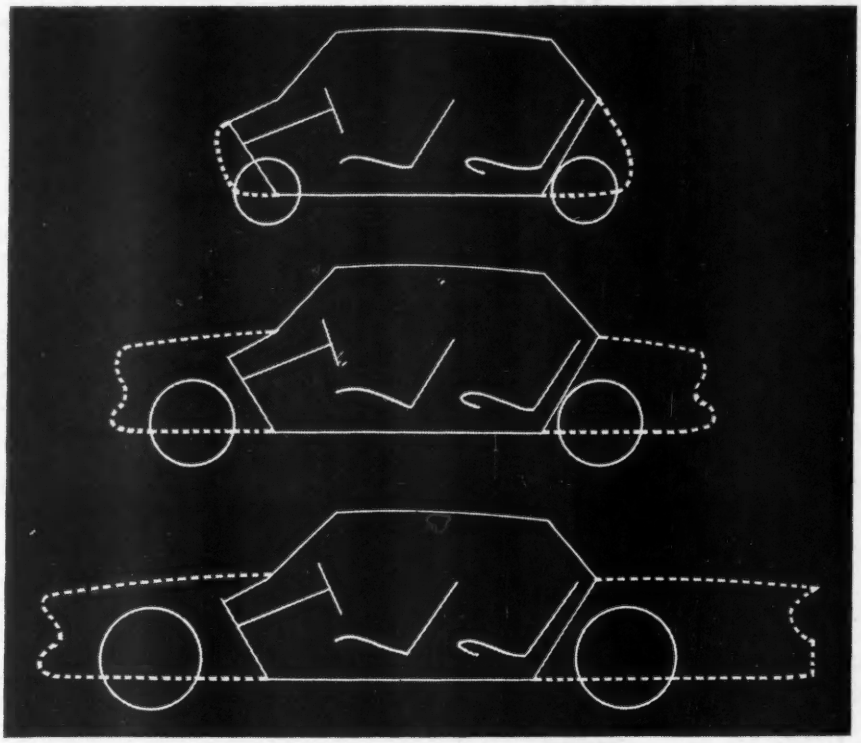
IT IS NOW CLEAR that smaller cars are the key to continued prosperity for American automobile manufacturers. By 1961 every company, including those making "prestige" cars, will have compact cars on sale or under development. Successful as they are, the present compacts are not the complete solution to the problems created when the industry allowed automotive development to go in only one direction for 20 years. No one is better aware of this than the auto makers themselves. Several of them are taking steps which will lead to the production of still smaller cars capable of competing with European and Asian imports on their own terms.

The obvious question arises: "If smaller cars are so useful and so profitable, why haven't they been made before?" One answer, of course, is that they have been. The Aero Willys, the Henry J, the Hudson Jet, and the 1950 Rambler represent postwar attempts to make and market smaller American cars. None of them was very successful, for good reason: Not one of them offered any real advantage to the buyer, *except* in size. And, curious as it may seem, overall size is not a very important consideration in the acceptability of an automobile. Certainly there are limits—we have seen American cars grow beyond practical dimensions in the past decade, and we have seen European "bubble" cars shrink to the point of absurdity, but the really important factor in a good automobile design is usable space.

It is a mistake to think that current small cars are selling on the basis of size alone. Every one of them offers comfort, convenience and economy that the earlier cars lacked. The most interesting proof of this can be found in a look at the record of the 100-inch-wheelbase Rambler. The 1950-'55 car was bulbous, had limited maneuverability, and was loaded with "luxury" features—it was, in fact, a scaled-down big car, with all the drawbacks that implies. The 1958-'60 reissue of the same car has been a brilliant success—because the styling was toned down, the handling was sharpened up, and the price was reduced. Sold as a small car on its own merits—not as a substitute for a rolling drawing-room—it is a satisfying automobile. Mechanically it is conventional, but the personality it has been given is not . . . and therein lies its appeal.

For many years there was a widely held opinion that it would cost just as much to make a small car as it did to make big ones. All the automobile companies had designed smaller cars, it was said, but they offered no advantages and were therefore shelved —presumably forever. A statement that gained much currency said in effect that it cost as much to machine a ring gear for a Ford as it did to machine one for a Cadillac. Actually, this was only a part-true statement. Obviously a smaller part, be it a ring gear or a crankshaft, will have less material in it. This lowers raw-material cost. Not so obvious but just as important, is the fact that the smaller part will take less time to machine, thereby lowering labor cost, and that it will use up less of the working life of the machine-tool cutting-bit. It *must* cost less than a bigger part. Less, but not *much* less—not enough less to cut cost of car in half, for example. Not even enough to cut cost 10 per cent . . . so big cars were the best answer. However, Detroit engineers

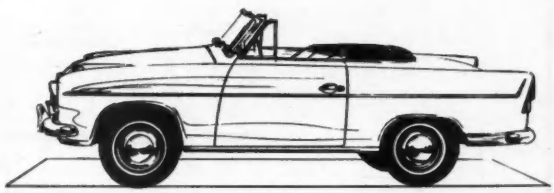




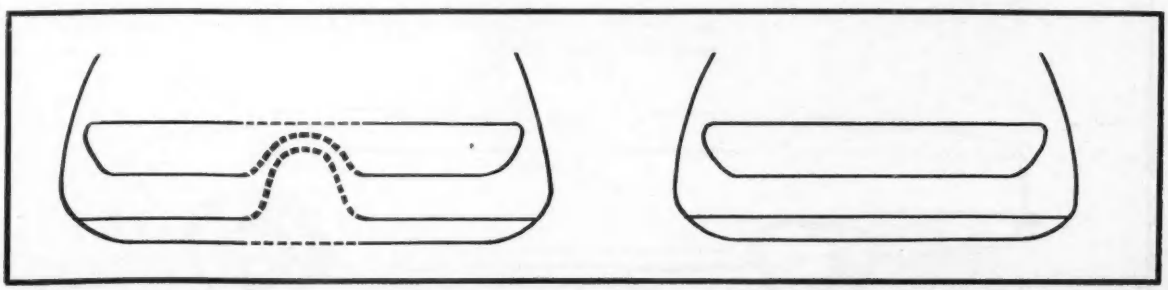
The size of the newest dramatic small-small car (Austin and Morris 850) compared to a representative standard-size car (opposite page) reveals that a bigger car does not necessarily mean more interior passenger space, but only more front and rear overhang.

continued to talk in terms of relative cost of large and small ring gears when they should have been thinking in terms of ring gear-no ring gear. If a piece can be eliminated, there is a 100 per cent saving—but first one has to think of eliminating it.

Only when conventional thinking was abandoned were auto engineers able to make real progress with the idea of smaller cars. Unconventional approaches, typified by the rear-engine placement of the Corvair, the alternator system of the Valiant, the sophisticated iron casting of the Falcon's engine, have produced cars which are not only smaller, but also cheaper to make, more satisfying to own. Now that they have caught on to the principles involved, Detroit designers are eager to try their hand at the "impossible" task of competing with European cars in the $1500 class. Ford Motor Co. in particular is reported to be fully committed to the task. It is not an easy one. *continued*



German Hansa-Goliath 1100 convertible, one of the cars being studied in Ford's small-small car research, shows that a smaller car design can still offer pleasing style.



Driveline hump in conventional car means that front and rear center passengers have restricted legroom and decreased seat cushion comfort; car is effectively only a four-seater. Front-wheel drive, or rear engine-rear drive, permits flat floor.

Small-Small Car...

continued

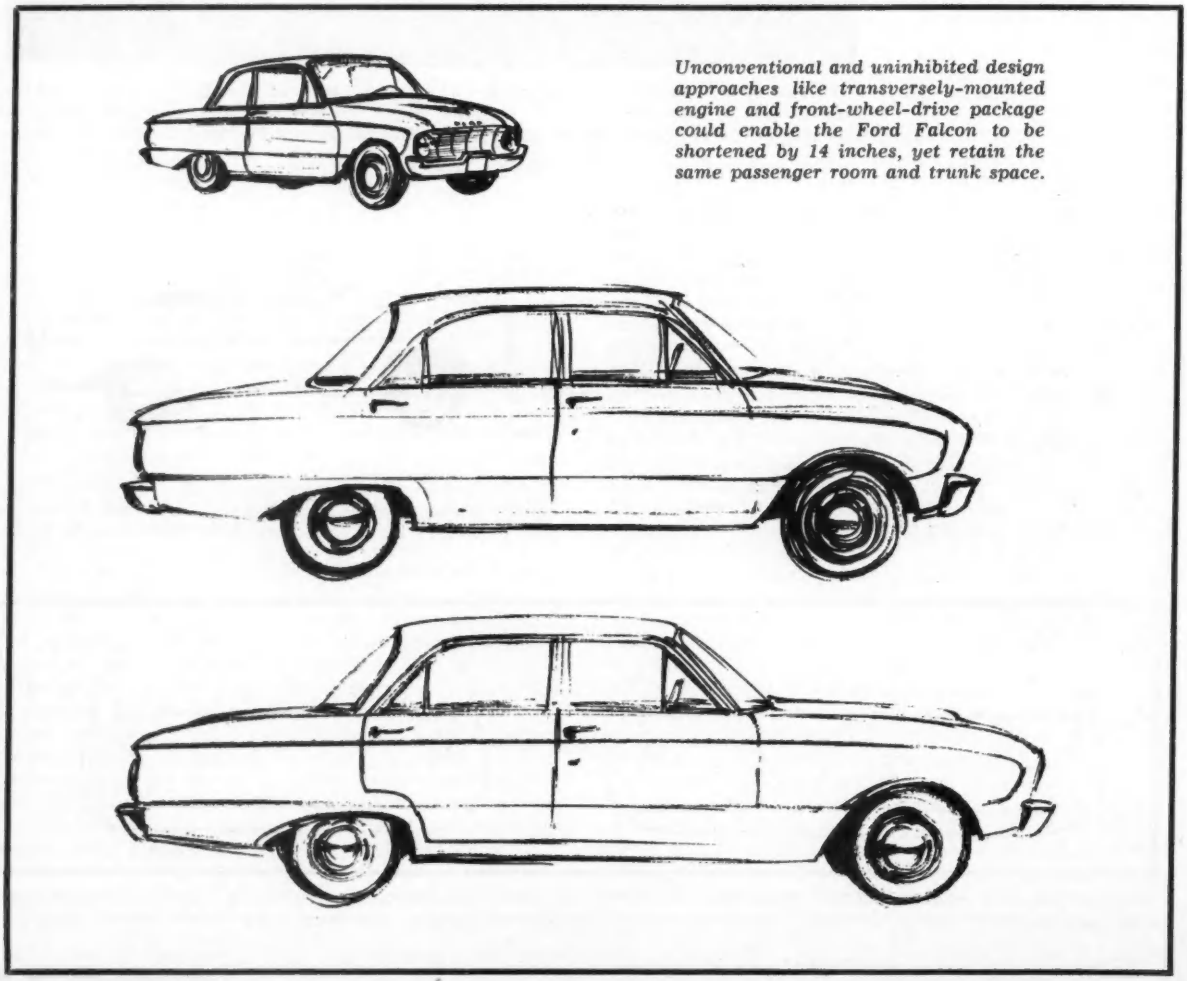
The U.S. has the highest auto-worker labor costs in the world, and it has long been thought that a small American car would have to be terribly expensive in order to cover labor costs. Even the VW Werke management decided that it would be impossible to build their car here, although they went so far as to buy a plant. How then can Ford expect to produce a car which will have enough quality to allow equal competition in the marketplace?

Their hope is to accomplish the impossible through superior engineering, to make a car which does not require much labor to build. They expect to offer so much more value than European cars that there will be no problem of choice. Body engineers are thinking in terms of unit structures which will be virtually self-jigging, made of fewer pieces of steel, and which will have no nuts and bolts to be tightened by human labor. They expect to provide more space inside a smaller package, one which uses less material for better results. Suspension engineers are studying means to eliminate complicated linkages and costly parts. Rubber blocks are undoubtedly being tested as road springs; nylon and teflon are being used to prevent the need for lubrication—and for grease fittings (which, after all, cost a little more). Powerplant engineers are thinking exclusively in terms of engine-final drive packages—front engines with front-wheel drive, rear engines with rear-wheel drive. Simpler engines are being tested. Some have only two cylinders, some are two-cycle.

The end result can be a better car, one which offers advantages that no cars today possess. Such a car can expand the current automobile market many times. As car prices have risen, more and more young families have been forced to buy foreign, or drive used cars. A cheaper American car will attract buyers for whom even the compacts are out of reach.

Although Ford has been more willing to admit interest in the small-small car (see page 17), that company is by no means alone in considering means to get into the field. General Motors had experimental cars running as early as 1957, powered by German Lloyd two-cycle engines. General Motors research has accumulated enormous amounts of information on two-cycles, and could develop a production engine of low cost in a very short time. GM also has a whole Process Development section devoted to the problem of lowering production costs, possibly the most vital part of a small-car program.

The compacts are only the first wave of the revolutionary tide sweeping Detroit today. The second wave might be said to be the new compact and more specialized trucks being introduced now. The small-small cars will be the third. What the future holds no one knows, of course, but it is known that the ninth wave is the biggest one. Maybe we'll all be flying by 1968!

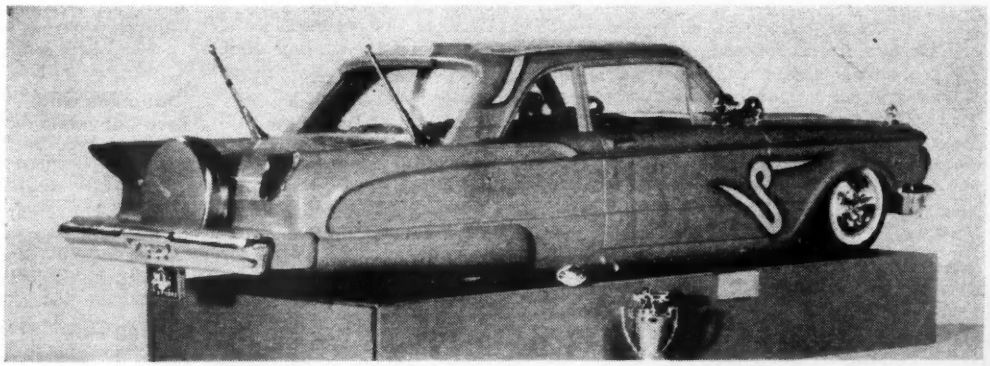


Unconventional and uninhibited design approaches like transversely-mounted engine and front-wheel-drive package could enable the Ford Falcon to be shortened by 14 inches, yet retain the same passenger room and trunk space.

Customized Compacts



BEFORE YOU TAKE THE TORCH AND HAMMER TO YOUR FALCON OR COMET, WHY DON'T YOU "PREVIEW" YOUR RESTYLING IDEAS WITH A MODEL KIT?

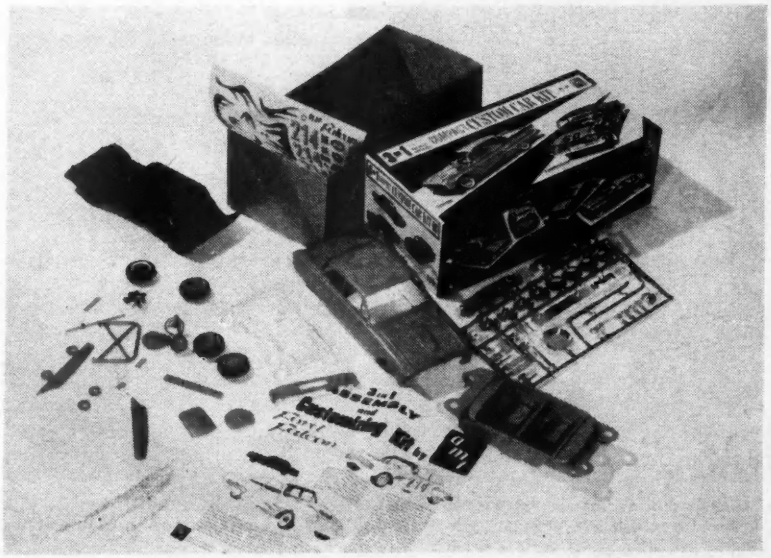


HAVE YOU WONDERED what the popular new compacts would look like customized . . . ? Now you can see—with the aid of ½₅-scale model customizing kits.

In cooperation with the editors of MOTOR TREND (who suggested restyling themes that required no wild sheet metal or body modifications), the AMT Corp. has packaged assembly and customizing kits for the Falcon and Comet (pictured here), and for the Corvair and Valiant (to be shown next month).

The 3-in-1 kits (like the one laid out at the right) permit the building of a stock model, a stock racing version, or an individually styled custom. A full complement of accessories, including decals, enables you to come up with a wide variety of customizing approaches.

The Falcon and Comet street-and-show customs on this page feature new fender skirts, lakes pipes, spots, aerials, grilles, scoops, flame decals, special hubcaps and Continental kits.



Bolt-on kit boosts top-end performance of Renault Dauphine

AT 60 MPH, THE POWER just starts to come in. If you keep your foot in it, with the twin carbs wide open, it gets better and better the faster you go. Finally, speed levels off at over 75 mph.

The Dauphine we're talking about is stock in every way, with one exception. The difference is a free-flow manifold fitted with twin SU carbs, a header-type exhaust, a free-flow muffler and an exhaust booster. All these are simple bolt-ons, installed by the local Renault dealer for $16. This Peco conversion kit comes complete with all fittings and adapters from Engine Imports, Inc., 1140 N. Harbor Dr., San Diego, Calif. for $185.

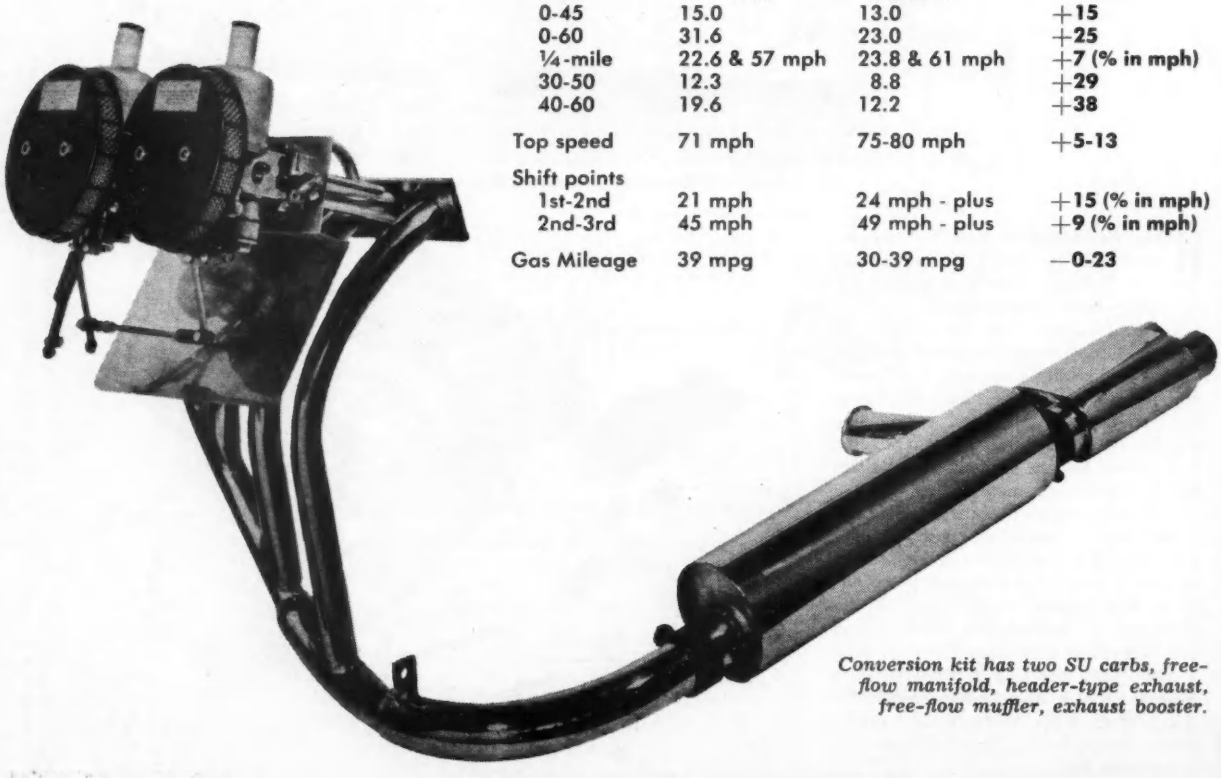
The first thing you'll notice when you leave the driveway is that suddenly you've gone up to about 25 mph in first gear real fast. The urge is to stay in first just a little longer, but you'd better resist it. The tachometer that you'll have mounted on the dash (if you're smart) reads 5500 rpm, and your valve gear is stock. Besides, you've been on it less than six seconds!

The next thing you'll notice is that when you go into second gear there's no hesitation and no bogging down. You have picked up second gear at 2700 rpm, where the twin carbs are just starting to go. In only nine more seconds you're there —5500 rpm and close to 50 mph. Remember those valves are stock, and it's time to shift.

Now you pick up top gear at about 3300 rpm. Your new carburetors like to work here, and bring you smoothly and very rapidly to top speed—about 75-80.

What you'll like most about the transformation is the complete lack of effort required to keep up with the big cars.

	Stock Dauphine	Dauphine with Peco Conversion	Percentage Change
Acceleration			
0-30	7.1 secs.	7.2 secs.	—1.5
0-45	15.0	13.0	+15
0-60	31.6	23.0	+25
¼-mile	22.6 & 57 mph	23.8 & 61 mph	+7 (% in mph)
30-50	12.3	8.8	+29
40-60	19.6	12.2	+38
Top speed	71 mph	75-80 mph	+5-13
Shift points			
1st-2nd	21 mph	24 mph - plus	+15 (% in mph)
2nd-3rd	45 mph	49 mph - plus	+9 (% in mph)
Gas Mileage	39 mpg	30-39 mpg	—0-23



Conversion kit has two SU carbs, free-flow manifold, header-type exhaust, free-flow muffler, exhaust booster.



Modified Dauphine has terrific mid-range torque and a lot of top-end horsepower. Very few hills require second gear.

There's a lot more power in the speed range where you use it most.

The stock Dauphine comes through with a compression ratio of 7.75 to 1. But remember that compression ratio is a mechanical thing—the relationship of cylinder volume at bottom dead center to the volume at top dead center. This is not the actual (called "effective") compression ratio. This effective compression ratio is usually a lot lower because carburetor and manifold restrictions do not allow a full charge into the cylinder in the limited time the valve is open, lowering the volumetric efficiency. Back pressure from stock exhaust systems keep a fresh charge from coming in, too.

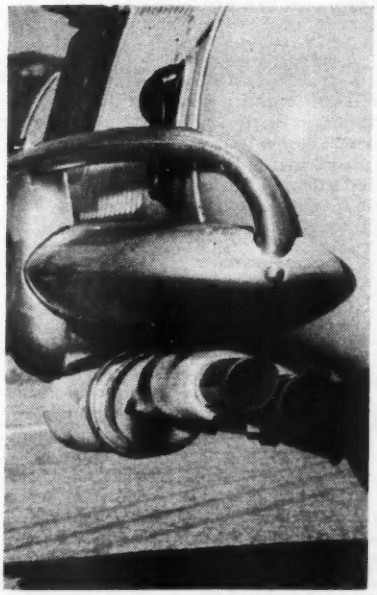
With twin 1⅛-inch carbs and clean manifolding, the restrictions are cut, roughly, in half. This means that if we had 70 per cent efficiency producing 30 hp, we should now have about 85 per cent efficiency producing about 36 or 37 hp. We have a corresponding increase in torque at cruising speed and especially at high speed. There should also be a slight loss in torque at the very low end (such as when coming off the line).

Riverside Raceway is one of the places where theory becomes fact or is discarded. We were right. The stock Dauphine goes up to 20 mph—even 30 mph—quicker than our modified version. But that's where it ends. From there on until the other end of the quarter-mile the only thing the stocker sees of the modified Dauphine is the large business-like muffler mounted transversely just forward of the rear bumper.

Commenting on the Peco Renault conversion kit: Each component is a well-engineered, well-made item. Nothing is chintzy, right down to the porcelainized finish on the manifolding and muffler. SU's, of course, are standard high-speed carburetors. Our test car was kept absolutely stock, except for the kit, even though it was a big temptation to put shims under the valve springs (we resisted the temptation).

It's difficult to say which of the components—manifold, carbs, exhaust—provide most of the boost. It really doesn't matter, since they are part of the kit and are designed to complement each other for maximum efficiency. We showed a negligible increase in fuel consumption despite the big power boost.

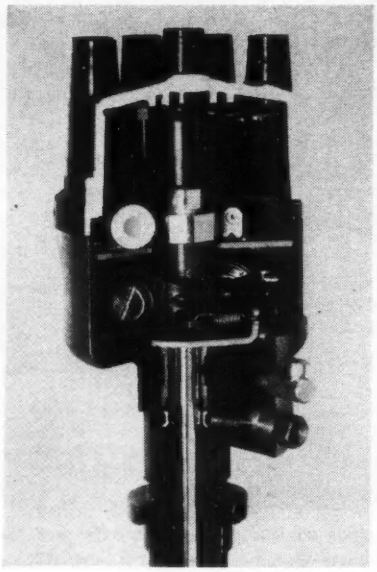
MOTOR TREND likes the thinking behind this simple bolt-on installation. We also like this particular kit. It makes a real going machine out of a car that tends to be a little faint of heart on the freeway. It's willing, but can't quite keep up. With the Peco conversion kit, it can. And, you can bet that a happy new owner will make sure that it does. **—Len Griffing**





Twin stinger in the Dauphine's tail (dual exhaust booster) is the only external evidence of the under-hood modifications. Carb air cleaners are removed here.

Holley Rotovance distributor offers longer, trouble-free life



MODERN PRODUCTION V8 ENGINES are a good buy, dollar for dollar, and pretty lively performers to boot. But, by and large, the distributor that nestles under the hood leaves a lot to be desired. With few exceptions, the mounting plate that forms a base for the points floats and wobbles, producing an increasingly erratic spark the tighter the engine is wound. Vacuum timing and centrifugal advance are erratic, too, and before too many miles the shaft bushing starts to wear. Then, proper timing is impossible.

Holley, famous for their carburetors, have been working on a distributor to solve some of these problems. It's nothing revolutionary, but rather a fine, heavy-duty piece of precision equipment that has been engineered to eliminate normal distributor ills. The design goal was 100,000 miles of maintenance-free service, plus extreme accuracy and flexibility.

There is no breaker-plate wobble because the plate is fastened to the housing, providing a stationary platform for the points. The centrifugal weights and the vacuum advance have been combined into one unit located inside the distributor body. Since they are close to the shaft, all timing advances operate off the shaft by altering the plate angle. The close-couple provides a high degree of accuracy.

Longer bearing life results from keeping the rotating mass close to the center of rotation. This reduces the loading on the bearing, which is made of a self-lubricating synthetic. The vacuum line is flexible, attaches at a point low and out of the way. The hollow distributor shaft serves as a gallery between the vacuum line tap and the vacuum advance.

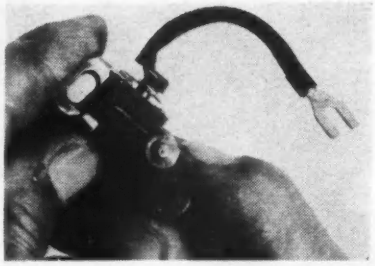
Case and shaft are heat-treated for hardness, with brazed construction for ruggedness. All tube and diaphragm materials are immune to deterioration from contact with oil, gasoline or ozone in the air. Normal temperature variations have no effect on efficiency.

Rotovance distributor, which has been awarded the MOTOR TREND Seal of Approval, is available as replacement for most Ford products (including Mercury and Lincoln) from '55 to '59. The intended market is the truck industry, because of the ruggedness of the product. We think we'll be seeing a few of these units in the gas-coupe class because of their extreme accuracy.

Remember, Henry didn't exactly design his mills for any 12-second quarters, either.

Dayton points and condensers prove race-winning combination

AFTER YOU READ THIS, if you know anything about ignition, you'll probably want to fight with us. Dayton Automotive's experience at Daytona Beach and Darlington seems to prove that a few revered theories just "ain't necessarily so." We'll give you the story as Lloyd Ragon, Racing Director of Dayton Automotive Products, gave it to us...



Dayton points are one-piece construction, with the rubbing block made of Zytel nylon. It is molded into the body, and has excellent wear characteristics. Because of these characteristics, spring tensions from 42 to 62 ounces prevent float or bounce; yet, there is no dwell variation over as long as 15-20,000 miles. At the Darlington 500 last year, Jim Reed's car ran from the green to the checkered flag, was inspected, showed less than one degree of variation.

The points operate in a straight line, with valve and seat action, return action supplied by a coil spring around the contact point shaft. The spring pushes straight in the directions the points move. Absolute alignment of contact point surfaces supplies 5½ times the contact area of a non-premium point.

Daytona Beach proved that in some instances one set of points works better than duals, and that setting up for minimum recommended dwell produced the best results. With positive point action, coil saturation effectively starts sooner. Too much dwell created a condition of *overlap* between coil saturation and coil collapse. The result was ragged performance and loss of revs. Decreasing the dwell *and* going to a lower-capacity condenser provided smoother operation and an increase in rpm.

The general feeling is that a high-capacity condenser helps at high rpm. Dayton technicians discovered that this theory did not hold water with the late-model cars. At high speed the high-capacity unit had a tendency to retain the charge too long, whereas a low-capacity condenser releases its energy quickly. The combination that seemed to work best at Daytona (5700-6200 rpm) was a condenser rated under 0.2 MFD (microfarad).

Dayton points and condensers are now available for the GM, Ford and Chrysler lines, in some cases as far back as '33 models. Dayton frankly admits that their products are not cheap. They make a quality product that is priced accordingly: $4.95. Once installed, and run for 12,000 miles, the points are reset. After that, if anything goes wrong up to 25,000 miles, they are replaced free of charge.

We wish we had the space to give you more of the full story. If you want all the facts, drop a line to Dayton Automotive Products Co., Box 12, Dayton 1, Ohio.

Dayton points have been awarded the MOTOR TREND Seal of Approval.

BUY Direct by Mail and... SAVE MORE on All ACCESSORIES and PARTS in the World's Largest Automotive Dept., Store — J.C. WHITNEY & CO

TRIPLE CONTACT IGNITION POINTS

For All Cars

...the vast contact ...Have small contact ...area of ordinary ...ar is insured by ...points. Flow of cur... ...rent is restricted and ...coil is starved.

...rovides greater coil saturation for a hot... ...smoother spark at all speeds. ...ooth ignition in tune longer—engine run... ...more smoothly. ...Reduces costly, constant replacement of ig... ...nition points. ...Eliminates ignition trouble—saves time, saves ...money.

...Easily installed — replaces original points ...perfectly—no alterations to distributor nec... ...essary.

...Wake up your auto ignition system—give new ...life to your car or truck with these sensation... ...al new and long-lasting triple contact igni... ...tion points. Get peak performance—increase ...gasoline mileage and cut down crankcase ...pollution.

...ese contact ignition points are specially de... ...signed and constructed to eliminate the faults ...of present day conventional points and to do ...away with the need for FAST high ...points voltage.

...Their sliding, wiping action they remove ...the oxidation that is continuously forming on ...the contact surfaces, they remove any foreign ...matter, and present large clean contact sur... ...faces that allow smooth full flow current to ...the coil. Result: contact 5 ordinary sets of ...points while increasing the performance of the ...ignition system and the overall efficiency and ...performance of the engine.

...BE SURE TO SPECIFY EXACT YEAR, MAKE & MODEL ...of car installed on.

...No. 864 ..... Postpaid —Per Set $5.00

BOOKS THAT TELL AND SHOW YOU HOW—

To Fix: Your Ford— Your Chevrolet— Your Plymouth—

...R YOUR CHEVROLET HAND BOOK
...all models 1940 thru 1957. 232 pages of ...tions and illustrations.
...1,220—Each—POSTPAID $3.95

...R YOUR PLYMOUTH HAND BOOK
...all models 1946 thru 1957. 224 pages of ...tions and illustrations.
...118—Each—POSTPAID $3.95

FIX YOUR FORD HAND BOOK
...all models 1932 thru 1957. 224 pages of ...tions and illustrations.
...119—Each—POSTPAID $2.95

...rd Model "A" Service Manual
...epair information on model A's
...376—Each—POSTPAID $1.00

...mouth (Dauphine) Owner's Hand ...ok. For repair and maintenance. Over 180 ...360 illustrations.
...22—Each. POSTPAID $3.00

...lkswagen Owner's Hand Book. ...er 150 illustrations on care ...servicing of VW
...918—Each. POSTPAID $2.00

...uxhall Maintenance & Repair ...ok. For all models from 1933 thru 1958. ...pages, over 100 illustrations.
...329—Each. POSTPAID $2.25

...glish Ford Maintenance & Repair ...ok. For all models from 1934 thru 1958. ...pages, over 133 photos, drawings.
...371—Each. POSTPAID $2.25

...evrolet Speed Manual. How to ...and tune Chev. and GMC engines. Complete ...ata and information. 128 pages.
...350—Each. POSTPAID $2.00

...del A&T Ford Owner's Hand ...ok. Contains 576 pages of information ...instructions on operation and maintenance ...both "T" and "A" models.
...361—Each POSTPAID $6.00

CUSTOM FIT Fender Well Fender Skirts for 59-60 CARS



FLARED BOTTOM

...ert new styles that add greater beauty to ...ur car you own. Fit inside and mount flush ...ith fender ... just like original equipment ... add that ultra-custom look. Complete ...h positive locking levers—won't rattle or ...f off. Made of heavy gauge steel with prime ...ish ... ready to paint to match your car ... Can be installed in minutes. Where en... ...ing, be sure to specify Make, Year, Model ...f Car, and whether 2-door or 4-door.
...316—
...e Pair..... $12.95

NEW SHOCK OVERLOAD SPRINGS

...Installs Over Present Good Shock Absorbers.
...Extends springs carry heavier overloads with a level ride—no bottoming.



UP TO 2000 LBS. ADDITIONAL LOAD CARRYING CAPACITY.

...ey to install—anyone can install in minutes. ...o special tools required. Slips right over ...ered shock absorbers. No more sag and ...ng. No car bottoming. Fits almost all makes ...models. Increase road clearance. ...s most rear airplane type shock absorbers ...ake, model, year and model of car when ...dering.
...5381—Per Pair..... $6.95

"Hollywood" Wolf Whistle



Intake manifold whistle gives the wail, rail, imitates a barking dog and other effects. Simple to install ... works off the intake manifold.
...51—POSTPAID, Each..... $2.95

Stainless Steel ACCESSORY GRILLE KIT for 1960 CORVAIR



Now ... add a touch of gleaming beauty and smartness to the front end of your new Corvair with this easy-to-install grille kit. Designed and engineered to fit the Corvair to perfection. Kit consists of four stainless steel bolt-round bars with decorative indentations, attaching parts and complete installation instructions.
No. 493 ..... —Per Kit..... $5.25



FUZZY WUZZY STEERING WHEEL COVERS

- Fit all steering wheels.
- Protect new steering wheels.
- Covers shabby worn steering wheels.
- Keeps hands dry in hot weather, warm in cold weather.

The finest steering wheel cover ever made. High pile velour with elasticized binding gives a plush cashmere-like feel. Makes driving more comfortable in any weather. Nonskid rubberized back. For that soft, smooth luxury car feel, install a "Fuzzy Wuzzy" steering wheel cover. Choice of red, blue, or green colors. Fits all stag steering wheels.
No. 419 ..... Postpaid..... $1.25

Color Dye for Lamp Bulbs

Customize Your Car With Colored Instrument Lights.



This is a permanent transparent dye that will adhere to lamp bulbs. Not a cellophane coating. Use on dash lights, dome lights, safety lanterns and radio panel lights. Simple to use —applicator furnished—one bottle will color several bulbs. Available in RED, GREEN, BLUE and VIOLET. State color wanted when ordering.
No. 745—
Each..... $1.00

PIN STRIPING

The Newest and Latest Custom Design Choice of White, Gold, Black, or Red



Ready made original design striping, easily applied in minutes. Can be applied on any clean, dry surface. Will not chip, peel or fade. Kit contains fifteen circals in nine different sizes—up to 6½".
Will stripe an entire car; fenders, trunk lid, hood, skirts and doors. Specify color wanted when ordering. White, Gold, Black, Red.
No. 238—POSTPAID. Per Kit. Postpaid..... $1.00

Chrome Plated MICRO HORN



Fits all cars—ideal for sport cars, imports, compact cars, motorcycles—adds beauty, great warning power. Can be used as a separate horn for city use.
Smart-looking warning signal that gives forth a loud, clear sound. Compact size (5½" diameter, 3¼" length) permits mounting on body, fender, bumper, bumper brace-rods, or between radiator and grille. Has heavily chrome plated face plate, stainless steel diaphragm; all other parts have cadmium undercoating. Processed for moisture-resistance. Heavy mounting bracket for built-in durability. Easy to install.
No. 339 ..... —6 Volt $6.50
No. 340 ..... —12 Volt .....

AH-OOO-GAH Chromed HORN



Here it is for the sport car enthusiast. Not a vibrator or other substitute but a genuine motor driven horn.
Chrome Plated Bell with Steel Wrinkle Painted Housing. State if 6 or 12 VOLT
No. 60—POSTPAID..... $12.60
All Chrome Plated Bell and Housing. Weatherproofed for outside mounting. State 6 or 12 VOLT
No. 63 —POSTPAID..... $15.00

Sensational Discovery **Chrome-Like Finish**



Refinisher Tested, Proved or Worn Out Chrome to Match the Original Brilliance.

- An Amazing New Do-It-Yourself Process.
- Gives A Reflective Chrome-Like Finish.

With this new finishing process rusted, pealed or worn chrome can be refinished to a brilliant lustre to match the original finish. No need to have shabby chrome on the car or spend a large amount of money to have parts rechromed. With Chrome-Like Finish these parts can be refinished to their original lustre. Not a paint—not a enamel. Each kit contains all the necessary material and easy to follow instructions.
No. 106—POSTPAID. Kit..... $4.95



ELIMINATE THE DANGER OF SCALDING BURNS with this SAFETY PUSH-BUTTON RADIATOR CAP for ALL CARS with Pressurized Cooling Systems

- First basic pressure cap improvement in over 28 years!
- New built-in button prevents release of pressure until safe!
- Built to original equipment specifications.
- Easy to install! Just like ordinary radiator caps.

For your own personal safety, for the safety of the man who services your car ... replace your present radiator cap with this new Safety Push-Button Radiator Cap. Specifically engineered for all sealed and pressurized cooling systems, this safety cap is the answer to increased radiator pressures on most cars. Each added pound of pressure raises the coolant temperature another 3° F. Increases in temperature and resulting pressure combine to make an even greater hazard when radiator caps are removed from overheated engines.

Just a touch of your finger is required to release the pressure in your cooling system when removing radiator cap. Excess pressure is automatically vented off into overflow pipe—cap can be removed safely, quickly and easily.

Install this Safety Push-Button Radiator Cap on your radiator now—remove the risk of injury, speed up your inspection service, reducing the time required to service "boil-overs."

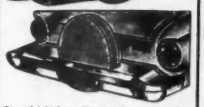


Permits release of pressure before removing cap

When ordering, be sure to specify Make, Year and Model of car for which cap is desired.
No. 614 .....
Each..... $2.00

CONTINENTAL KITS for 1960 Corvair, Falcon

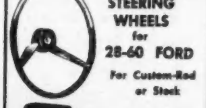




Beautiful high quality, yet low cost continental kits—designed to blend in and complement the contours of these "compact" cars. Give the 1960 Corvair or Falcon a genuine sports car look. Takes the spare tire out of the trunk, increasing trunk carrying capacity. Kits are complete with easy to mount brackets, custom designed to fit the car, plus rigid type tire carrier, bumper bracket extensions, splash guard, chrome tire cover and easy to follow installation instructions. All metal parts are prime finished.
No. 436 ..... —For 1960 Corvair, $49.95
All Models. Per Kit.....
No. 435 ..... —For 1960 Falcon, $49.95
All Models. Per Kit.....

Deluxe Custom Styled STEERING WHEELS for 28-60 FORD

For Custom-Rod or Stock





- 15" DIAMETER LEAVES MORE LEG ROOM FOR CHOPPED OR CHANNELED RODS.
- RECESSED CENTER HUB ..... FOR EXTRA SAFETY.
- Beautiful combination of Ivory—Black and gold.
- Easy to install.

Deep-dish type steering wheel that replaces original equipment perfectly. Fashioned of plastic ferrite in mottled ivory and black with gold flecks—colors cannot fade or wear off. Smaller 15" diameter leaves more leg room, permits faster turning, greater maneuverability. Strong steel core, plus center hub ornament. For foot-operated horn button, see below.
For 28-60 Fords.
No. 353 ..... —Each..... $11.95
For 49-60 Fords.
No. 356 ..... —Each..... $11.95

6 Brand-New Car Plaques

Hear Hoosegows, Eye-Catching Badges for the Individual Car Owner.

All plaques have ground raised letters and design. Leatherette-like background has beaded-in and bonderized enamel. Made of heavy cast aluminum—rustproof. Large size 8"x4". Can be mounted in a jiffy.



No. 329 A ..... No. 329 B



No. 329 E ..... No. 329 F



No. 329 G ..... No. 329 L

All numbers, Each..... $2.98

Picture-Carrying Plaque



New, unique car plaque, complete with plastic covered packet in which a photograph can be mounted, up to 2¾"x3½" in size. Picture can be changed easily, simply by plastic covering included. Large 5"x9" plaque is of heavy cast aluminum with shining raised letters on a leather-like black enameled background. These read "Who Owns My Car? My Daddy Does!"
No. 469 ..... —Each..... $3.50

"Stop Car Thieves" with this Auto Burglar Alarm





Let this private policeman protect your car 24 hours a day ... completely automatic ... no alarm bells intermittently. If car is molested, it itself automatically. Easy to install.

Here is the only all-out protection against accessory, tire, gasoline, and auto thievery. Alarm installs under car hood and automatically blows car horn intermittently the instant anyone touches any part of the car—and continues to blow it for approximately 13 seconds after car is left unmolested. Simply set switch that attaches to dash upon leaving car. Upon contact, alarm scares thief away. With complete instructions for simple, quick installation.
No. 17— ..... POSTPAID —Each $2.50

It's Back Again — "The Guy Ninetier" Triple Twist ANTIQUE STYLE AUTO BULB HORN



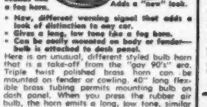
Made of Gleaming Polished Brass

Sounds like Adds a "new" look. to here.

- Now, different warning signal that adds a look of distinction to any car.
- Gives a distinctive tone like a fog horn.
- Can be easily mounted on body or fender—bulb is attached to any 6 volt source.

Here is an unusual, different styled bulb horn that is a real attention getter. The "guy 90's" era Triple twist polished brass horn can be mounted on fender or cowling with long flexible brass tubing permits mounting bulb on dash panel. When you press the rubber air bulb, the horn emits a long, low tone, similar to fog horn.
No. 428 ..... —Each..... $26.50

ELECTRIC "Ding-Dong" BERMUDA BELL



- The two-tone chimes with the sound from Bermuda.
- Just a touch of the finger gives that well-known "ding-dong" sound.
- Easily installed—fits all cars.

Now ... an electrically operated Bermuda bell that uses the same clear, ringing "ding-dong" as heard on the romantic island of Bermuda. Operated remotely from a dash-mounted push-button, bell can be mounted under hood, on the firewall, between grille and radiator ... or if desired, on the trunk of the car. Precision engineered for tone and resonance. Beautifully chrome plated throughout. Complete with mounting bracket, push-button switch and necessary wiring. POSTPAID
No. 390 ..... 6 Volt, Each.....
No. 391 ..... 12 Volt, Each..... $9.50

CONVERTIBLE RAINCOAT

Quick, Slip-On Protection in Any Kind Of Weather For Convertibles.



Attractive Plastic cover protects top or interior from dirt, dust, fog, rain, snow and other elements. Saves all wear and tear on expensive fabric tops. Quick, sure, easy, inexpensive protection with one-minute installation. Built to last, with elastic tight-grip edge, and snaps. Fits all standard model convertibles. Can be used when top is up or down. Also handy as a cover for play pens, small boats, furniture, baby carriages and many other items. Furnished in plastic bag for storage.
No. 574 ..... —Each..... $5.95

AUTO FABRIC SPRAY



For a new looking car interior. Brightens and freshens faded and soiled fabrics. 12 oz. pressurized can for use on headliner, door panneling and floor covering. Does not rub or fade. Use to tu-tone upholstery. Choice of red, rust, brown, tan, dark and light green, dark and light blue, dark and light gray, yellow, maroon, rose or black and white.
Specify color when ordering.
No. 56—
POSTPAID..... $2.95

TRUNK TOOL HOLDER

FITS ALL TIRES!

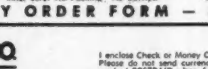


Fits over the spare tire in trunk. Simple to install. Convenient for storing tools, shoes, flashlight and other car needs. Eliminates trunk rattles. Made of durable leatherette, sewed with nylon thread.
No. 731—Each—POSTPAID..... $1.98

HOLLYWOOD NOISE MAKER MUFFLER

WHEN YOU WANT PLENTY OF NOISE—INSTALL A

For all makes of Cars.

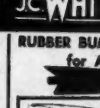


- Shell length only 11 inches long
- Overall length 14". Diameter 5".

THE MUFFLER WITH THE LOUDEST R-O-A-R!

- Straight-thru construction with perforated inner core. No Packing—No Baffles.
- All Steel Construction with electrically welded seams.
- Universal end caps with bushings make this muffler adaptable to any size tailpipe.
- Complete with clamps and bolts.
No. 841—Each..... $3.98

HI-SPEED ELECTRIC SIREN



Developed especially for the U. S. Navy & Coast Guard. Now used for hundreds of Fire & police departments, construction agencies, etc. Complete with bracket, screws, 10 ft. of cable & push button. Great theme!
No. 71—6 Volt ..... POSTPAID $13.39
No. 91—12 Volt ..... POSTPAID $16.49

Cattle Caller Horn

Moos Like A COW! BELLOWS LIKE A BULL!



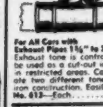
A new sound sensation in auto horns. Control mounted on steering column permits variation of tone from the low moo of a cow to a full bellow of a bull. Ideal for use by cattle owners and those who want a different sounding horn. Easily mounted—complete with switch. For either 6 volt or 12 volt systems.
No. 638— 6 Volt, Each..... $14.85
No. 639—12 Volt, Each..... $18.45

CAST IRON EXHAUST CUT-OUT



For All Cars with Exhaust Pipes 1½" to 3½"
Exhaust tone is controlled from the dash. Can be used as a cut-out in the country and closed in residential areas. Can also be used to operate two different toned mufflers. Sturdy cast iron construction. Easily installed
No. 612—Each..... $3.75

AUTOMATIC TRUNK LIGHT



Completely automatic operation. Equipped with Minneapolis — Honeywell Mercury Switch. Simple installation. Lights when trunk lid is opened. Fits any car—all necessary wire included. Complete with enclosed unit.
No. 141—POSTPAID, Each..... $1.59

6-12 Volts

AERO type SHOCK ABSORBER Conversion KITS for MODEL A & B Fords, 32-48 Ford V8



- Replaces the Hard to Get Front Shock Absorbers on Model A and Early Model B Cars.
- Choice of Black or Chrome Finish Brackets.
- For Stock or Dropped Axles. Easy to Install.

Install a pair of these new hydraulic double action airplane type shock absorbers on your Ford. Enjoy that extra smooth, safe, comfortable ride, added safety and better car control. Specially designed brackets in this kit make it easy to replace those old, worn original type shock absorbers.
Conversion kit contains one pair of brand new airplane type shocks complete with bushings, right and left mounting brackets, one pair of lower mounting studs, washers, nuts and easy to follow installation instructions. FOR FRONT ONLY.
FOR STOCK AXLES

Stk. No.		Per Set
386	—Kit with black brackets	$19.98
387	—Kit with chrome brackets	22.50

FOR DROPPED AXLES

Stk. No.		Per Set
382	—Kit with black brackets	19.98
383	—kit with chrome brackets	22.50

"LUCKY" Gear Shift KNOBS

FIT ALL gear shift levers

New, novel gear shift knob—the first to have them. 2 ball knob is 1⅞" in diameter—all black with figure 8 on white background. Lucky dice is 1⅞" square — white with black dots. Made of composition plastic.
No. 438 ..... —Dice knob..... each 1.50
No. 439 ..... —8 Ball knob..... each 1.50

Chrome Door Lock Knobs

TRIPLE CHROME PLATED



Changes colored door lock knobs to all chrome. Customizes interior of car and brightens inside of doors. Specify Car & Year.
No. 575—
POSTPAID..... 2 FOR $1.00

USE THIS HANDY ORDER FORM — MAIL TODAY!

J.C. WHITNEY & CO.
1917 (027) Archer Ave., Chicago 16, Ill.

I enclose Check or Money Order $..... to cover payment in full. Please do not send currency or stamps. We pay postage on items marked POSTPAID when full payment accompanies order, you pay shipping charges on items not marked POSTPAID. Minimum C.O.D. order accepted must be $3.00 or more—enclose at least 25% deposit, pay balance plus all shipping charges upon delivery.

Name.....

STATE—My car is a..... Year..... Model..... No. of Cyl.....

Address.....

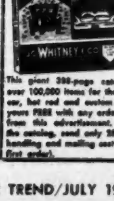
City..... Zone..... State.....

☐ Catalog sent Free with your order. Check here if you want Catalog only—Send 25c.

Ship following order on same schedule as merchandise in stock (write)	Quantity	Stock No.	Description	Price

FREE!

NEW 388-PAGE CATALOG JAM-PACKED WITH VALUES



NEW LOW PRICES

THOUSANDS OF NEW ITEMS

1960 EDITION JUST OUT!

This giant 388-page catalog, packed with over 100,000 items for the automotive, truck, car, hot rod and custom car owner . . . is yours FREE with any order for items selected from this advertisement. If you just want the catalog, send only 25c to cover part of handling and mailing cost (refunded on your first order).

MAC'S
NO. 13
STOPS RUST AND SCALE IN YOUR RADIATOR
SAVES COSTLY REPAIRS
At Service Stations Everywhere
Unlucky for rust!



NOW A U.S. SIZED SPORTS CAR KIT FOR ONLY
$395.00



"THE CONQUEST"
Fits Henry J., Corvette, Jeepster & T-Bird without modification or any properly modified American chassis. Easiest installation and many extras at no added cost. NEW—QUEST Q.T. for M.G., T.R., Healey & all imported chassis. Only $320.00. Same features as Conquest.



Complete cars available, also complete line of accessories. Send $1.00 for 16 page "How to do it" brochure including modifications for all cars.
LA DAWRI COACHCRAFT
MT-7 1540 Canal Ave Long Beach 13, Calif.

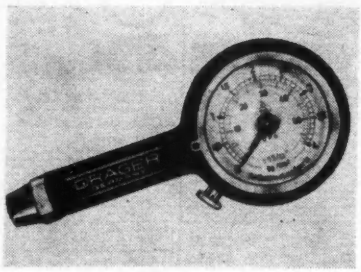
ATTENTION CORVAIR OWNERS



DUAL EXHAUST SYSTEM FOR YOUR CORVAIR
Boost horsepower, gas economy and performance on your Corvair with the new J&J Custom hi-efficiency exhaust system. Gives quiet, pleasant tone and adds a distinctive touch. Simple installation in minutes without special tools. Fully guaranteed.
Only $29.95
Send Check or M.O.
Dealer Inquiries Invited
J & J MUFFLER SPECIALTIES
501 S. La Brea Inglewood, Calif.

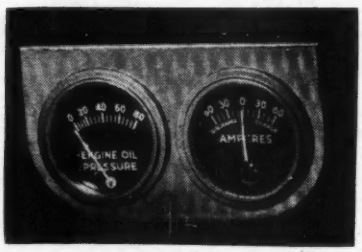
NEW PRODUCTS

A TIRE PRESSURE GAUGE that can be adjusted to the prevailing barometric pressures insures accurate tire inflation, which in turn means longer tire life and greater driving safety. The precision-built Drager gauge fits any vehicle or aircraft tire valve. Red-and-white dial readings are in pounds-per-square-inch (up to 57) and in Kg/cm². Handsomely finished in black crackle, with a shatterproof crystal, the gauge is imported from



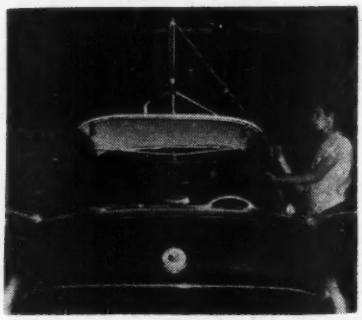
Germany by EMPI, Box 668, Riverside, Calif. Cost: $4.95, complete with leather case.

NO NEED TO GUESS at oil pressure and generator charging rate if your car has only warning lights—simply install a CSP gauge kit. The chrome finished panel (3 x 5 inches) contains an 80-pound oil pressure gauge and a 60-0-60



ammeter. The kit, which can be mounted under or into dashboard, comes complete with six- and 12-volt bulb, socket and lead wire, copper tubing, brass fittings, and installation instructions and diagram. Kit can be ordered ($13.95, postpaid) from Cold Spring Products Co., Cold Spring, N.Y.

CALLING CORVETTE OWNERS! Tired of wrestling with your hard top? Now you can forget the grunting and groaning, and the frantic search for a helping hand. The whole job becomes a one-



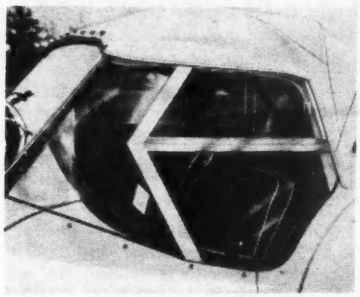
man cinch with a block-and-tackle and sling unit offered for $9.95 by James Auto Specialties, Box 151 M, Pasadena, Calif. A ceiling-mounted eye-bolt and lanyard tie-off are the only installation items. Gang pulleys mechanically reduce the heft of the top to a child-can-do-it weight.

CONVERTING YOUR CAR RADIO from AM to FM is now possible with a new Rae-Mar tuner whose under-dash plug-in installation takes only minutes. Operat-



ing on standard 88 to 108 megacycles, the unit has 12-volt negative ground polarity and weighs only 4¼ pounds. The sensitive tuner has a "drift-lock" feature that eliminates station skipping. Installation does not disturb AM reception. Priced at $79.95, tuner is manufactured by Rae-Mar Electronics, Inc., 1917 Hoyt Ave., South El Monte, Calif.

TRIUMPH TR-2 AND TR-3 owners will welcome a new side-window acclaimed as "the closest yet to a roll-up." The Centurion combination window and windwing has five operation positions, permitting wide ventilation control and passenger convenience. Both upper panels slide, and the entire upper unit folds down inside for a half-window opening. Contoured windwing portion can be used separately, or quickly removed.



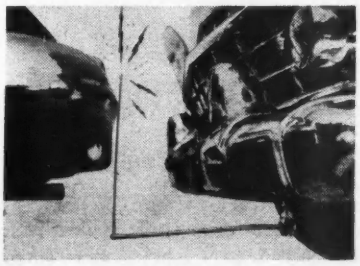
Combination unit offers 63 per cent more visibility, and it stores in trunk in space-saving upright position. For prices and availability write to Centurion Motor Products, 340 Canal St., New York 13.

THE CAVALIER SPORTS BOOT, individually benchmade of boarhide, offers a strong soft leather that has been waterproofed



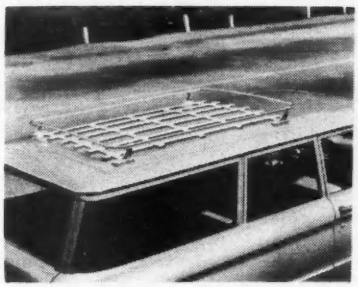
and yet breathes through millions of tiny pores. Fully leather lined, with neolite heels and specially processed leather soles. Nine inches high, these tobacco-brown boots are available in all regular sizes for men at $25 (plus 50c for shipping). Outfitter Norm Thompson, Suite 60, 1805 N.W. Thurman St., Portland 9, Ore., guarantees satisfaction or money back.

DRIVERS WHO PARK BY EAR need no longer be a menace to your shiny bumper or fragile grille. You can warn them to keep their distance with the electronic



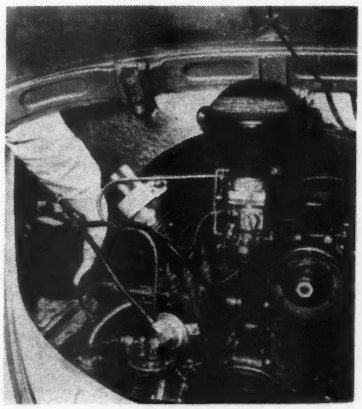
Bump Alarm—a 10-inch-tall antenna that attaches in seconds to front or rear bumper and sounds an alarm upon the slightest contact. (It can also save embarrassment when *you're* doing the parking!) Selling for $2.95 each, Bump Alarm is distributed by E. Joseph Cossman and Co., 7039 Sunset Blvd., Hollywood 28, Calif.

A TOP LUGGAGE RACK for compact station wagons can almost double cargo-



hauling capacity. This new carrier, the Topper, measures 60 x 40 inches, has rails and stanchions of high-luster chrome and slats of anodized aluminum. Neoprene grommets protect the roof from mars and scratches. Installation is fast, simple and sure. For prices and other information, write to Accessories International, 1925 Blake Ave., Los Angeles 39.

AN OIL FILTER need no longer be only a dreamed-of luxury for owners of small imports that come unequipped with this



highly important accessory. Fram offers a complete installation kit with filter unit, hoses and fittings for Volkswagen (pictured here), Renault, Simca and Opel. Detailed, illustrated instruction sheet should make the job an easy Saturday afternoon task for do-it-yourselfers. For prices, availabilities and other filter information, contact Fram Corp., Providence 16, R.I., or any Fram distributor.

continued

NEW 1960 CATALOG



CATALOG COUPON

SEND 25c FOR NEW 1960 SURPRISE MONEY SAVER CATALOG. 40% BIGGER AND BETTER THAN EVER. EACH CATALOG CONTAINS $1.00 FREE CERTIFICATE. NEXT ISSUE SENT FREE.

NAME.....

ADDRESS.....

CITY.....**STATE**.....

HONEST CHARLEY SPEED SHOP, INC. Box MT 1904 Chattanooga, Tenn.

YOU CAN BE AN AUTO REPAIR SPECIALIST IN JUST 3 WEEKS!



You can be working as an automotive specialist in just three weeks with **Auto Mechanics Institute** SHOP METHOD TRAINING. Thousands of successful A.M.I. graduates are making **BIG MONEY** in the field! You will be given expert training in our modern shops under actual conditions, using the latest testing equipment and machinery. You will be taught the newest techniques, and learn to repair the most advanced automotive units from expert instructors with years of actual experience in the industry.

TUNE UP — BEAR ALIGNMENT — AUTOMATIC TRANSMISSIONS — BODY & FENDER — AMMCO BRAKES — CLAYTON DYNAMOMETER — FOREIGN CARS — ENGINES — RADIATORS — AUTO AIR CONDITIONING — MACHINE SHOP

GUARANTEED RESULTS!

Write for FREE COUNSELING and Information on Courses TODAY! It may be the most important step in your **BIG MONEY** Career!

AUTO MECHANICS INSTITUTE
4931 S. Vermont Ave. Los Angeles 37, Calif.

REMOVABLE FIBRE-GLAS TOPS FOR ALL SPORTSCARS

Your sportscar deserves a Plasticon removable hard top, engineered to enhance the lines and individual design of each sportscar, while providing ultimate passenger comfort.



- New 1960 design for all sportscars
- Sound absorbing plastic foam headliner
- Recessed wrap-around rear window
- Ultra-light with maximum strength
- Lowest price consistent with quality

Write for free brochure and price list. Watch for Plasticon's new compact and sportscar utility trailer.

MT-7 DEALER INQUIRIES INVITED

PLASTICON INC.

9721 Klingerman St., El Monte, Calif.
Gilbert 4-0519
America's largest mfr. of fibre-glass tops



STOPS OIL BURNING!

MOTOR MEDIC

for MAXIMUM ENGINE POWER

STOP EXHAUST SMOKING!

AT GARAGES, SERVICE STA., ACCESSORY STORES

RADIATOR SPECIALTY CO.
CHARLOTTE, NORTH CAROLINA

RELAX!



TULARELOFT SEAT BELTS NOW AVAILABLE WORLD WIDE

For all vehicles

America's finest seat belt—Tulareloft's DELUXE MODEL #300 & #400 with light-weight metal to metal buckle that will not catch on sleeves. Easily adjusted with one hand. 100% nylon, non-twist webbing. Belts test far in excess of 6000 lbs.—Tested, approved and used by California Highway Patrol (used by CHP four consecutive years). Over 18 matching colors, plus special lengths. Complete with all mounting hardware. Only $12.95 per passenger

Many models & styles available in our complete line of seat belts and shoulder harnesses from $5.95 to $12.95. Child harness for crash safety $11.95. AS FEATURED EDITORIALLY IN MAY MOTOR TREND #300 & #400 belts tested far in excess of all other belts, also far in excess of G.S.A. & S.A.E. requirements.

DEALERS & DISTRIBUTORS INQUIRE—FRANCHISE TERRITORIES STILL OPEN

If not available at your nearest store, use order blank below. Free color guide and literature on request.

Tulareloft

P.O. Box 248
Tulare, Calif.

Please RUSH _____ Deluxe Seat Belts @ $12.95 per passenger. Enclosed is check or M.O., sorry no C.O.D.'s. Calif. res. add 4% sales tax. Color desired _____. Make and year car _____

Name_____

Address_____

City_____ State_____

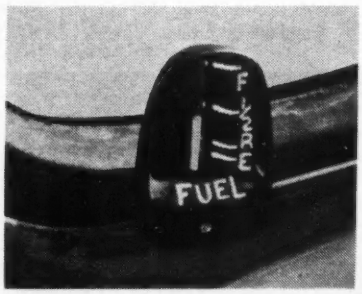
☐ Please send free color guide
☐ Please send reprint MOTOR TREND article May issue.

Dealer, distributors: attach to letterhead

NEW PRODUCTS

continued

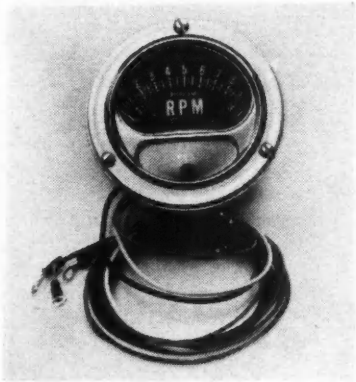
VW FUEL GAUGE so simple that it seems impossible not to have been included by the manufacturer is available from West Coast Engineered Products, P.O. Box 97, Goleta, Calif. Price is $6, no installation charge needed.



The unit consists of a cork float on the end of an arm, the sender unit attaching to the filler neck. A flexible mechanical linkage connects to the dash-mounted gauge. For fine calibration just bend the arm.

Here's a unit with no complicated connections, nothing to go wrong, priced where it's foolish to guess at fuel level.

IN ADDITION TO their fine line of self-contained all-electric tachometers for standard automobiles, marine and industrial engines, Dixson Products Co., of Vashon, Wash., manufactures a similar instrument for high-revving two-stroke



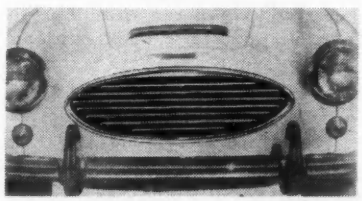
engines. Calibrated to 10,000 rpm, the new tach uses advanced semi-conductor design and requires no sender, relay or separate current supply. The regular line of Electro-Tachs is available in 6000 or 8000 rpm, and Models 70 and 77 can be used on six- or eight-cylinder engines with either six- or 12-volt systems. Nothing need be altered or adjusted, which means the instrument can be changed from car to car regardless of voltage or number of cylinders. Prices start at $42.50. Bruce Dixson will be happy to answer questions, send you a catalog, or fill your order by mail.

THE IMPROVED RIDE that comes from a Traction Master bar installed on leaf springs (Jan. '60 MT) is now offered to owners of cars with coil rear springs. We put a new Traction Master Coil Control kit (torque arm and rear shocks) on a '59 Chevy that had displayed a tendency to be a little "mushy" in the turns and under heavy loading. The torque arm, attached between the axle and the frame, helps stiffen the rear suspension and decrease sway in turns; the specially calibrated shocks produce a more level though slightly harder ride than the stock units. The combination of Traction Master shock absorbers and torque arm does wonders in firming up



the rear end, eliminating bottoming, and providing a reassuring sense of stability when cornering. Listed at $47.45 (from Traction Master, 2917 W. Olympic Blvd., Los Angeles 6), the kit is available for '58, '59 and '60 Chevy and Pontiac models.

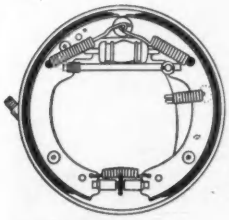
FLOATING GRILLE for the Austin-Healey 100 Six lends a distinctive, tasteful styling touch to the sportscar's familiar front end. Made of heavy-gauge chrome-plated steel tubing, the Amco Vista grille requires no installation tricks—



it fits neatly into the grille oval, with no holes to drill. Made by American Carry-Products, 13148-A Raymer St., North Hollywood, Calif., the grille is priced at $37.95.

Which brake design is on your car?

The Bendix Hydraulic Brake is used (with some modification) on most makes of General Motors, Ford Motor Company, Hudson, Nash and Packard cars. In this brake assembly, both shoes are connected by means of a spring at the heel, or bottom end, of the shoes. Because of this connection, these shoes thus work as a team and are referred to as primary and secondary shoes.



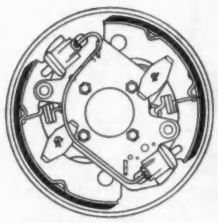
Bendix Hydraulic Brake

When the brake is applied with the car in forward motion, the wheel cylinder actuates only the primary shoe. This shoe in turn actuates the secondary shoe by means of a feature of the brake. This feature, called servo action, forces the secondary shoe into the rotating brake drum, with the result that it does about twice as much work as the primary shoe.

Because of the difference in work load for the two shoes on this brake, Raybestos provides a combination of linings with different coefficients of friction for each shoe within a single brake assembly. Raybestos PG sets ready for riveting and all "Contour Ground"* PGP Bonded Lined Brake Shoe sets contain a high friction lining for the primary shoe and a low to medium friction lining for the secondary shoe.

Inferior linings on this brake can result in short lining life, noise, dive, grab, fade,† or pull to one side. The Raybestos Proving Ground Tested set engineered for your car will have the best combination of linings to give you quiet, safe, sure stops throughout their long life.

The Center-Plane Brake, also known as the Total Contact Brake, is used on some 1956 Chrysler product cars and all 1957 through 1960 Plymouth, Dodge, DeSoto, Chrysler and Imperial cars. On the front wheels each shoe is actuated by an individual wheel cylinder. Both shoes are called forward acting shoes and should do exactly the same amount of work. The rear wheels use the same shoes, arranged to have one forward and one reverse shoe.



Center-Plane Brake Front Assembly

When the brake is applied, a rod going from the wheel cylinder to the toe end of the brake shoe forces the toe end of the shoe it works with against the rotating drum. As the toe of the shoe is forced against the brake drum, it tends to carry the entire shoe with it. This action establishes total contact between the brake lining and the brake drum.

All cars using this brake are originally equipped with linings bonded to brake shoes instead of being riveted to them. Since there are no rivet holes drilled into the shoe, it is necessary that these brake shoes be replaced with exchange lined brake shoes when a reline is needed.

Inferior lining in this brake often results in short lining life, grab, fade,† noise, and pull to one side. In order to provide the best possible brake performance, Raybestos uses a medium-low to medium friction material. You can always depend on Raybestos Proving Ground Tested linings for smooth, quiet, even stops and long life.

*Your assurance of perfect brake shoe to brake drum contact

†Loss of friction between brake lining and drum while brake pedal remains high

Want complete information on the fundamentals, relining, adjustment and troubleshooting of brakes used on all popular American cars, plus 20 foreign makes? It's all in the new Raybestos Brake Service Guide. For your copy, send your name and address with $2.00 to Dept. 87, Raybestos Division, Raybestos-Manhattan, Inc., Bridgeport, Conn.

RELINE WITH

Raybestos®

AMERICA'S BIGGEST SELLING FRICTION MATERIAL

RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., Bridgeport, Conn.

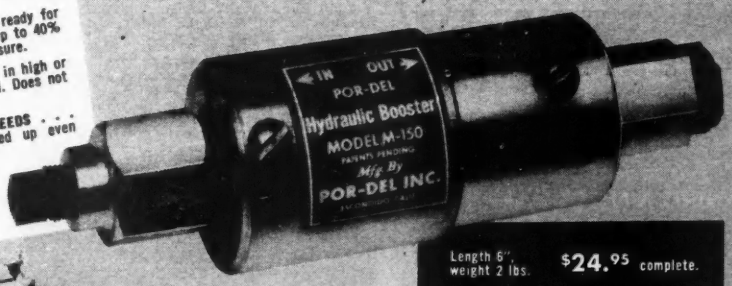
Raybestos-Manhattan, Inc., Specialists in Asbestos, Rubber, Industrial Adhesives, Sintered Metal and Engineered Plastics

RM

STOP!

easier and safer with the POR-DEL Hydraulic Brake Booster. Be it passenger car or pickup, sports car or dragster, you can't afford not to have this all new brake booster unit.

- EASIER SAFER STOPS . . . No grabbing or throwing action.
- LESS PEDAL EFFORT . . . Unit is always ready for action. Pedal firm with minimum stroke. Up to 40% more braking power with same foot pressure.
- NO VACUUM . . . Unit works equally well in high or low altitudes, with motor running or dead. Does not depend on outside power supply.
- LESS BRAKE FADE EVEN AT HIGH SPEEDS . . . Hydraulic line pressure can be pumped up even when brakes are hot.
- The POR-DEL can be mounted in minutes, either directly on the master cylinder or remote, in any convenient location of your choice.



Length 6", weight 2 lbs. $24.95 complete.



Jim Sughrue of the Waters & Sughrue racing team of Bakersfield, Calif., says this about POR-DEL.

"¼ mile drag racing has always presented a braking problem but since your unit has been installed, our problems are over. At Vaca Valley raceway we were able to stop our modified roadster in approximately 1800 feet from a speed of 175.78 M.P.H. We have recommended this unit to all our friends."

If you too have been experiencing braking difficulties, either on the freeways or raceways, solve your problems today. Contact your POR-DEL dealer or order direct.

Please send color brochure and technical data (I enclose 25c for postage and handling). ☐

Please rush my complete POR-DEL unit today. I enclose $24.95. ☐

I am interested in handling the POR-DEL as a dealer or distributor.

Please send further information and prices. ☐

Name_____

Address_____

City_____ State_____

Make of Car_____ Year_____

(or light truck)

National Distributor: DEALER ENTERPRISES, 9052 W. Pico Blvd., L.A. 35, Calif. Dept. MT-7

Adjustable SUNGLASSES

Nose Pads and Metal Bridge Can Be Contoured To Fit Your Face Perfectly!

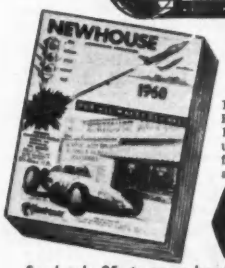


Panlux sunglasses are unbreakable – give complete protection against sun, snow, and fog.

Imported from France, they have been examined and passed by L'Institut D' Optique de Paris. Individually packaged in deluxe "carry-all" case. Available in two colors, green and amber, with or without sideshields. Priced at only $4.00. Sent postpaid. Specify color and sideshields if desired when ordering. No C.O.D.s.

WARNER IMPORTS
4015 W. Magnolia Blvd., Burbank, California

YOURS FREE! Newhouse Automotive Industries



LOOK
Honest Quality Fair Prices
SEE the NEWEST
Thousands Racing and Restyling Accessories. EXCITING new products for all cars. Send for this Valuable Catalogue today.

GREATEST CATALOG

Send only 25c to cover handling and mailing (refundable 1st order)
(DEALERS—write on your letterhead)
NEWHOUSE AUTOMOTIVE INDUSTRIES
5805 E. Beverly Blvd., Dept. 258, Los Angeles 22, Calif.

GUNK® degreases



Cleans engines, garage floors, power mowers, greasy walls economically and safely.
In aerosol or pour spout cans.
At better automotive supply and hardware retailers everywhere.

GUNK CHICAGO CO., River Forest, Illinois
RADIATOR SPECIALTY CO., Charlotte, No. Carolina

THIS IS YOUR LIFE Cornell University crash injury studies indicate that if you are ejected from an automobile during an accident, the risk of fatality is five times greater than if you remain in the car.

Approved 5000 lb. impact auto safety belts—friction & metal to metal design—100% DuPont nylon webbing—all colors—write for prices and literature.

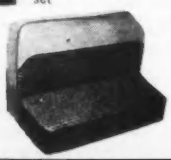


RAY BROWN AUTOMOTIVE
mfr. of the original auto safety belt
5656 SANTA MONICA BLVD., L.A. 38, CALIF.

MANUFACTURERS CLOSE OUT SALE



AUTO SEAT COVERS — American cars were $34.00, Sale $11.95 complete set
Foreign cars Sale $15.95 complete set



CONV. TOPS—Were $79.50—$24.95. While they last—State 2nd color choice, yr. and car. 25% with order. Balance C.O.D. or Send check. Postpaid.
TONNEAU COVERS — all colors. Plastic Leather. Were $39.95—Sale $9.95
Aluminum zip'r $1.95 ea.

RITE FIT AUTO COVERS 2334 1st Avenue, New York 35, N.Y.

SELL 'N' SWAP

SELL

'48 LINCOLN CONTINENTAL conv., with '48 Cadillac engine & Hydra-Matic. Exc. body; new tires. Best cash offer. Arnold Carlson, 2416 N. Beachwood Dr., Hollywood 28, Calif. Phones: HOllywood 5-9684 or HOllywood 5-6111.

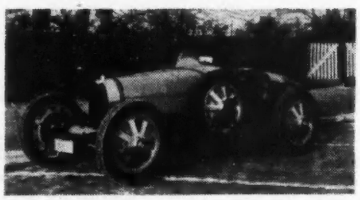
'35 PACKARD Super 8 conv. cpe. Sidemounts, wire wheels, rumbleseat, trunk rack. Partly restored, almost complete; body rough. Runs. 12-cyl. parts car for parts. $350. 9 Brimmer St., Boston 8, Mass.

'24 (?) PIERCE-ARROW dual-valve sed. Brass radiator, sidemounts, trunk. Plenty of brass & alum. under hood. Front-wheel brakes factory-installed. Clean; orig. $1200. 40 College Rd., Wellesley, Mass.

'24 HUDSON Speedster 5-pass. touring. Good orig. cond.; low mileage. Orig. baked-enamel rifle-barrel blue-black finish. Low, fast, good lines. Ready to go. $1200. Dr. Goodman, 14 W. Central St., Natick, Mass.

'17 PACKARD Twin-6 touring. 3rd series, complete, restorable. Good mech.; body rough. Walk-between seats. Parts available, incl. tires. Will be a rare beauty when restored. $1200. Wood, 1788 Beacon St., Brookline, Mass. Phone LA 3-6679.

'30 BUGATTI Type 35 2.3-liter, 8-cyl. racing car. Authentic—in perf. order after complete



o'haul. New engine & 5 new tires. $3500. Jean Blaton, 243, Chausee de Vleurgat, Brussels 5, Belgium.

CLASSIC & ANTIQUE CAR Sales Catalogs: Packard, Chrysler, Lincoln, Cadillac, Pierce-Arrow, Buick, Ford (Model A & later), Orphan & Foreign cars; minimum $5 ea. Also MoToR (N.Y.) Annual Numbers. Details for large, stamped, addressed envelope. D. R. Twohy, 400 N. Kenmore, Los Angeles 4.

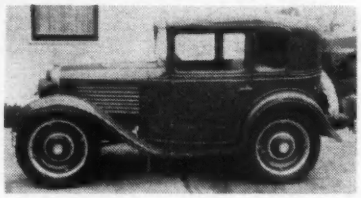
CORD CATALOGS—Limited supply of both 810 & 812 models; 2 catalogs, $2.50 ea. Some Auburn Speedster catalogs also left . . . now $1.50. All 3 for $6 . . . while they last. Brand-new cond. Sheldon J. Lewis, 61-33 213th St., Bayside, L.I., N.Y.

CATALOGS on all U.S. & European classics, period 1925 thru '42. MoToR (N.Y.) Annual Show numbers & monthlies. Over 5000 magazine ads in stock . . . every auto, every model, 1923 thru '37. Complete listing 35c. Sheldon J. Lewis, 61-33 213th St., Bayside, L.I., N.Y.

STEAM CAR'S 120 MPH—illustrated description of 1960 auto. Classics, antiques. Magazines over 50 pages ea. $4 yr. Dollar bills, money orders accepted (no coins). *Steam Cars*, Kirk Michael, Isle of Man, U. K.

STEAM CAR POWERPLANT PLANS—hundreds of details for lightweight car powerplant, switch-on start. $5. Also castings, assembled engines. Dollar bills, money orders accepted (no coins). *Steam Cars*, Kirk Michael, Isle of Man, U. K.

'29 AUSTIN. Body completely worked over; dark blue finish. 4 new tires; ready to go. $350.



Charles J. Klusak, 4 Cedar St., Yankton, S. D.

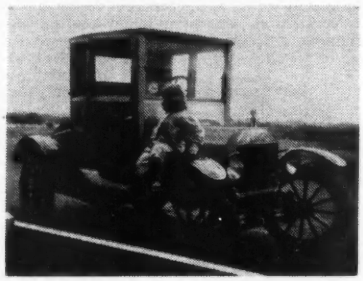
TRIPPE SENIOR safety driving lights—8½-in. dia. 6- & 12-volt available. Brand-new in orig. boxes; comes complete with all wirings, brackets, fittings & Gulmite wrenches. $36 pr., prepaid; 2 or more pairs for $32 pr. ea., prepaid. A. Ward Shanen, 2444 S. Orkney St., Philadelphia 48, Pa.

DENMAN "HANDCRAFTED" 6-ply rayon whitewall tires. Guaranteed for life of your car. All sizes available. 7.00x15 to 7.50x20, priced from $30 ea. to $47.50 ea. Tubes also available at $5.50 & $6.50 ea. Price list 25c. A. Ward Shanen, 2444 S. Orkney St., Philadelphia 48, Pa.

WORLD'S FINEST MOTOR CARS . . . 11x14-in. glossy photos of finest motor cars ever built, exc. for framing or mounting into 16x20-in. album. Reg. price $3 ea. Special—6 for $7.50 or 12 for $15, postpaid & insured. Set of Duesenberg or DuPont spec. sheets & antique car parts directory free with every order. A. Ward Shanen, 2444 S. Orkney St., Philadelphia 48, Pa.

'40 FORD conv. Perf. stock body, Oldsmobile engine; good top, ww's. $365. Glen Fogelstrom, 543 Blair Blvd., Eugene, Ore.

MODEL T brass-radiator cpe. Restored—professionally upholstered, engine completely rebuilt & balanced, chassis reconditioned. Blue body, black



fenders & wheels. Good tires. Drive anywhere. $795. Glen Fogelstrom, 543 Blair Blvd., Eugene, Ore.

AUTOMOBILE LITERATURE—old, new & foreign; glossy photos, shop manuals, dealer books; free motor magazines. Auto Maniacs of America, Stockbridge, Mich.

TUCKER AUTOMOBILE factory literature, order blanks, specs, of this fabulous car. Collectors' items. Send $1 for complete packet. J. Moore, 16 W. Fulton St., Grand Rapids 2, Mich.

MOTORBOOKS—owners handbooks, factory shop manuals, maintenance, repair, tuning, racing, rallies, antiques, classics, histories, data, motorcycles. Catalog 25c. Vivian Gray, Motorist's Bookseller, Hurstpierpoint, Sussex, England.

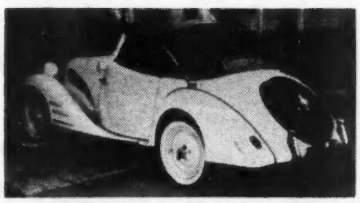
'39 LINCOLN Zephyr 4-dr. sed. Orig. uph.; very good body & tires. 54,000 orig. mi.; runs good. Make offer. Lloyd L. Barnes, 813 N. Vulcan Ave., Encinitas, Calif. Phone PLato 3-4119.

'41 PACKARD 160 7-pass. limousine. Mech. perf.; interior very good. New clutch, brakes, paint; exc. tires. A real crowd-stopper. $695 or offer. Joseph Stone, 6659 E. Prairie Rd., Lincolnwood, Ill. Phone ORchard 5-5956.

'32 FORD V8 Victoria. Rare body style—complete, orig., exc. thruout. Nice running order. Rare collector's item. Owned by me since '36. 1st $600 takes. R. A. Robotham, Bell St. W., Ingersoll, Ont., Canada.

'39 BANTAM rdstr. Completely rebuilt—body, engine orig.; new white nylon top, chrome perf. Artisan red, with ww's. Driven 600 mi. since rebuilt. $750. Charlie Messuri, 513 W. Main St., Rockaway, N. J. Phone OAkwood 7-7868.

'36 BMW with 6-cyl., 122-cu.-in., 55-hp. ohv engine; 4-speed gearbox. Good engine, new top



& interior; has broken axle. Best offer. Richard A. Carter, 59 S. Morrison, San Jose, Calif.

MOTOR TREND back issues. Vol. 1—the 4 copies mint, unbound. Vols. 2, 3, 4 also mint, bound in black buckram, spines gold-tooled. Offers, please. Ted Pittenger, 711 Kingman Ave., Santa Monica, Calif.

'35 PLYMOUTH 4-dr. sed. 90% orig.; 26,600 mi. Needs tires & driver window. Also 1 Oldfield "999" 3.00x30 tire—half in wrapping. Both car & tire for $475. D. W. Small Jr., East Machias, Me. Phone 3914-K.

'41 BUICK Century 4-dr. sed. Dark blue finish; ww's, heater. 57,000 mi.; fair cond. $150 firm. G. C. Blunk, 605 Williams Blvd., Springfield, Ill. Phone KIngswood 4-4503.

'29 FORD phaeton. New top. Good cond.; inspected & licensed. Best offer. Paul Mandak, R.F.D. #5, Binghamton, N.Y. Phone SW 7-6078.

'41 GRAHAM Hollywood 4-dr. sed. 20,000 mi. since complete rebuilding. White lacquer, good tires; extra parts car. Best offer. R. W. Shaver, 3600 Broadway, Gary, Ind.

NOW ACCEPTING new members in the Kaiser-Frazer Owners Club of America. Membership fee $5 per yr. For details & application blank, send stamped envelope. Paul M. Barker, R.R. #7, Crawfordsville, Ind.

'33 PONTIAC Straight 8 4-dr. sed. Orig. equip't, orig. 2-tone paint; good power. Drive anywhere. Rare model. $200. E. J. McGhee, 247 21st St., Ogden, Utah.

FOR '57 & '58 OLDS—3 carbs & manifold with air cleaners & vacuum attachments. $100; will ship C.O.D. John Toce, 116 Choctaw Rd., Lafayette, La. Phone CEnter 5-0151.

'41 LINCOLN CONTINENTAL hdtp., with '51 Ford 6 engine. Real tight, solid body; exc. mech. Partially dechromed. Drive anywhere. $650 or reasonable offer. Kenneth Hill, Veterans Hospital, 6-C, Albany, N.Y.

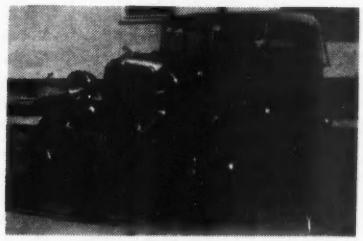
'28 DE SOTO—1st yr. model. Recently purchased from estate of orig. owner. Runs good; exc. cond. thruout. Fine collector's item—$850. Fred Schuremyn, Chappell, Neb.

'28 HUDSON Super 6 4-dr. sed. in good running cond. Partially restored. Best offer. Harry Park, Woodstock, N.Y.

FOR '56 FORD—New FoMoCo air-conditioning kit. Complete, incl. instructions. Cost $545 new; will sell for $150 plus postage. Model Garage, 1031 E. State St., Westport, Conn.

SAC—SMALL AUTO CLUB. Join this nationally recognized club. Receive bumper badge, ID card, newsletters, magazines, etc. Many benefits. Free info without obligation. Small Auto Club, Inc., 1717 Walnut St., Philadelphia 3, Pa.

'33 CHRYSLER Imperial 8-cyl. 4-dr. conv. Wire wheels, sidemounts, orig. chrome. Body & mech.



cond. exc.; safety-inspected. Pix available. $1000. Airmail inquiries. M/Sgt Adolph T. Beyer, 180th US ASA Co., APO 108, New York, N.Y.

'57 CHEVROLET Nomad station wagon. Orig. owner, mint cond.; 2-tone coral, white. Rare, discontinued body style—already a classic. Pix, details furnished. $1995. Peter J. Richards, 9130 Colfax Ave. So., Minneapolis 20, Minn.

'38 PACKARD 12 7-pass. sed. Exc. engine, cast-iron heads. Needs paint, uph. Drive away. $325. Also '32 Packard 12 engine—complete, except for '38 heads. Art Ballantyne, 994 Bernit Rd., El Cajon, Calif.

RESTORERS' GUIDE—antique & classic car Service, Supply Directory. Lists suppliers of cars, parts, tires, books, services; clubs, museums, publications. 1960 edition—$2 postpaid. R. B. Brigham, The Motomart, Frankton, Ind.

'39 BANTAM. Inspected & in good mech. cond. Spare engine & parts also available—ideal for restoration. Can be driven reasonable distance. Best offer. George D. Ford, 453 Callen Ave., Morgantown, W. Va.

'38 LINCOLN Zephyr V-12 3-window cpe. Perf. body, good interior; needs paint. R & h, vacuum 2-speed axle. Drive anywhere. $775 or make offer. T/Sgt E. C. Elvick, 202-A Thor, Sheppard AFB, Tex.

'51 MERCEDES-BENZ 220 4-dr. sed. Telefunken twin-speaker radio, heater, exc. ww's. Beautiful orig. interior. $995. Peter Fleming, 8428 Kirkwood Dr., Los Angeles 46. Phone OLdfield 6-1657.

'28 DODGE Victory 6 sed. Runs very good; 4 matched full-tread tires. Uph. fine, no rust—



ready for refinishing. $225. L. W. Peterson, 2606 Davis St., Boise, Ida.

STANLEY STEAMER ENGINE, vintage about 1922. Disassembled, but believed complete. $350. R. Altschuler, 121 Colwick Dr., Somers Point, N.J.

'23 ROLLS-ROYCE 20-hp 2-seater cpe. New paint; exc. mech. cond. Instruction book, tools & some spare parts. $2750. John Aitkens, 1546 N. Argyle, Hollywood, Calif.

'54 JAGUAR XK-120 MD chassis, with wire wheels. Runs perf.; ready to go but for body. Emmett Braatz, Browns Park, West Point, Va.

'24 DODGE 4-cyl. cpe. Orig. black finish; 22,000 actual mi. Exc. cond. thruout; can drive anywhere. No parts replaced. Make best offer. Burton T. Lahart, 117 1st Ave. S. E., Minot, N.D.

'41 BANTAM 4-seater conv. Body perf. $450. Howard Carnes, 715 Fay Dr., Glendale, Calif.

'31 AUBURN conv. sed. & '31 Auburn sed.—both for $95. Carl Swanson, P.O. Box 394, Spanaway, Wash. Phone LEnox 7-6277.

'56 MERCEDES-BENZ 220-S sed. Black, with ww's, r & h, sunroof. Absolutely perf. thruout—a real jewel for $2585. J. Edmunds, 1940 Bunting, Grand Junction, Colo.

'39 CADILLAC Fleetwood 60. Beautiful 7-coat black lacquer job, 6 good tires, sunroof, sidemounts. Runs good. $1000 or best offer. Stuart B. Nash, 320 Oak St., Ripon, Wis.

'31 FORD Victoria. A desirable model in exc. orig. cond. $645. Send for description & pix. Richard Walters, 1001 W. Oregon, Urbana, Ill. Phone EMpire 7-0554.

'48 LINCOLN CONTINENTAL cpe., with Ford Thunderbird engine. Rechromed, repainted in Royal Blue. America's most beautiful automobile—$2000. Newton Holland, Rochester, Minn.

'36 BUICK 4-dr. conv. phaeton. All orig., near mint—black, with red leather interior, sidemounts, new top. No rust underneath. Inspected & licensed. Send 8c in stamps for complete details; pix, 25c. W. B. Mollard, Westfield, N.Y.

'37 PACKARD 120 4-dr. trunk sed. Car like new in every respect; 30,000 actual mi. by 1st & only owner. A real beauty—$800. Mrs. A. R. Wolfe, 2618 Eastwood Ave., Evanston, Ill.

'34 DE SOTO Airflow cpe. Orig. engine, orig. paint—everything in good cond. 4 good tires. Best offer. Jeff Gorton, Otrs Mills Rd., R.D. 4, Newburgh, N.Y. Phone KE 4-9822.

'29 PIERCE-ARROW Straight 8 conv. cpe., with rumbleseat. Lovely cond.; new top & side curtains. A real gem—$3500 or best offer. George A. Padfield, Gen. Delivery, Tillsonburg, Ont., Canada. Phone VIctor 2-4197.

'34 LINCOLN KA V-12 sed. Good tires, drive anywhere; needs paint. $400. Also Main Bantam engine—a few parts missing; Robert Bosch ZR-4 magnetos. P. S. Corson, Rt. 6, Blackwell Rd., Marietta, Ga.

'38 PACKARD V-12 clb. sed. Engine, body, tires, interior—all in very good cond. R & h, ww's. $550. W. S. Snyder, 3516 N. Hamlin, Chicago 18. Phone IRving 8-3453.

'58 PACKARD Hawk supercharged 8 in mint cond. Full power, r & h; instrumentation includes manifold pressure gauge & tachometer. 19,000 mi. Best offer over $2500. W. P. Savignano, 12 Mechanic St. Framingham, Mass.

'35 HUPMOBILE Series 518-D 6-cyl. 4-dr. sed. Nice—still used on the highway. Will take best cash offer. Nicholas I. Weitermann, 4549 N. 38th St., Milwaukee 9, Wis.

'46 CHRYSLER Continental by Derham. 1 of 2, made for famous industrialist. Big straight 8,



smooth & quiet. Padded sport top with new woodwork & cloth. 50-gal. gas tank. $780. Jesse Nalle, 32 W. King St., York, Pa.

'15 OVERLAND touring car. All orig., body very good; not restored. Runs good. $1250. S. T. Stoleson, 4901 Circle Downs, Minneapolis 16, Minn.

1/16-SCALE WOOD KITS—Marmon V-16, '34 Packard, Pierce-Arrow, Cord L-29. Choice of engines, bodies; doors, hoods open. $2.50 ea. Vote on future makes, years, details. IMVOW, Dept. MT, c/o Franklin Ingraham, Albion, N.Y.

SELL OR SWAP

"CONQUEST" fiberglass body—complete. Box frame, ball joint suspension, mounts for Cad. Nearly finished, never used. Roll bar molded in windshield. All parts necessary to complete. $1150; trade for Jeep or ? W. J. Prsha, 1430 Vista Lane, Pasadena, Calif.

'33 LA SALLE spt. cpe. Body perf.; orig. paint, no rust. Mech. exc.; 30,000 actual mi. $600 or trade for late-model Ford. All letters answered. Claude H. Church III, 5510 Fresno Ave., Richmond Annex, Calif.

'40 LINCOLN CONTINENTAL conv. cabriolet. Lincoln V8 engine, o.d., r & h, ww's. Good body, Naugahyde uph., mech. A-1. In daily use. $1200, or trade for any late model. O. O. Deems, Box 6522, Tulsa 9, Okla.

'37 ROLLS-ROYCE spts. cabriolet, with magnificent Barker coachwork. Recent reconditioning, including engine, brakes, cooling. Formerly Sir Laurence Olivier's. $3250; trade considered. Pix, data sheet 50c. W. C. Wilkinson, Tomahawk Circle, Okemos (near Lansing), Mich.

'53 FERRARI 2.6 Swiss Ghia cpe. on short chassis. Engine perf.; 5-speed gearbox. Dark blue; tires good. $3500; consider interesting trade. Photo $1. Harry Morrow, 2900 W. Magnolia Blvd., Burbank, Calif.

WANTED

'55 OR '56 PACKARD Caribbean. State cond., mileage, color, equip't & no. of owners. If older model, send picture. James E. Manifold, P.O. Box 332, Martinsburg, Pa.

CORD Supercharged Model 812. Send photo & price airmail. Charles Burnett, Belmont Manor, Bermuda.

ORIGINAL OWNERS' instruction books, sales catalogs, shop manuals—any make 1900-'25, classics '25-'35. Also ALAM, ABT & NACC Handbooks. Prices & details in 1st letter, please. R. Pierce, 3517 Dollar Dr., Akron 19, Ohio.

For sportsmen 6 to 60!
Broad line of models



KITS $39.95 less motors, from
Complete kits with motors from $109.95
Send 50¢ for 22-page catalog.
ARNOLD-DAIN CORP.
BOX 74, MAHOPAC, N.Y.
Dealer Territories Available

PREVENT COSTLY DAMAGE TO YOUR CAR WITH . . .
BUMP ALARM



New electronic antenna sounds alarm upon the slightest contact, protecting your expensive grille, lights, bumpers. Perfect for new compacts & imported cars. Simple installation in seconds with no holes to drill. Cheapest insurance you can buy . . .
order several for front & rear, 2nd car, even a boat!
Makes an ideal gift. $2.95 each $5.75 per set
If ordering 1 bump alarm, spec. front or rear bumper
Dealers: Inquire about this fast moving item.
E. JOSEPH COSSMAN & COMPANY
7039 Sunset Bl., Hollywood 28, Cal., Dept. MT

FIRST IN SMALL CAR TRAILERS
Now—a trailer especially designed for the small car. Light—compact—sturdy.
Priced from $89.00



Sporty I
IMMEDIATE DELIVERY
Fully assembled.
Attaches to any car.
Send for free catalog.
Dealer inquiries invited.



Sporty II
ADLER ENGINEERING
1344 SEABRIGHT, LONG BEACH, CALIFORNIA

BUY DIRECT SAVE UP TO 1/2
it's FREE
DON'T BUY TILL YOU SEE OUR ALL NEW
CATALOG
New Lower Prices on 60,000 Items



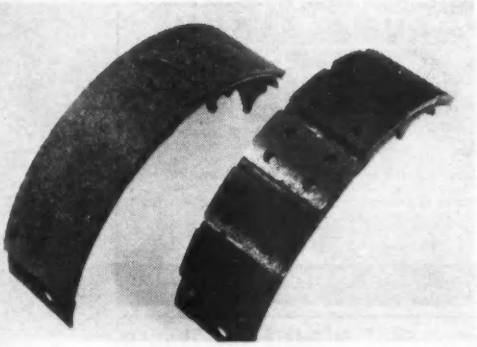
Shows latest Road Car, Custom, Rod, Drag, and Racing Parts — Superchargers, Injectors, Cams, Manifolds, Exhausts, Ignitions, Swapping Kits, Chrome "Doll-Up" Accessories, etc. Includes ALL FAMOUS BRANDS plus new exclusive items available only thru Almquist.

ALMQUIST Engineering Co., Milford, Pa. MTC-7
I enclose 25¢ to cover mailing and handling. (Refund on first order)
NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
TRADE DISCOUNTS TO GARAGES GAS STATIONS ETC

GETTING MORE GO STOP!

continued from page 63

Frendo is an imported organic lining material that has an excellent name in sportscar racing. It is a good example of the extremely high-friction competition linings which, if set up properly and allowed some time to break in, will prove amazingly durable. For street use, this type of lining should be run only on the trailing, or long shoe, in conjunction with a good standard lining on the leading shoe.



GM options offer replacement of stock shoes and liners (left) with block-type cera-metallic or sintered iron surface.

With high-performance linings such as Frendo, it is important that the bonding be done at a shop familiar with the lining you want. For a good safety measure, have the lining riveted as well as bonded. A competition lining should never be used on a car with power brakes.

Another excellent possibility is the latest type Cera-Met lining offered by Chevrolet. This lining just will not fade! It is also supposed to have overcome the problem of locking and erratic operation that was occasionally encountered with the earlier Cera-Met linings. This lining comes welded on the stock Corvette shoes in a kit containing high-temperature springs, etc. Be sure to get and use the entire kit. It is built, of course, to bolt onto any Corvette, but can be adapted to Chevies and other cars with similar dimensions. Use the matching Corvette drum, too; it's excellent.

IT IS QUITE POSSIBLE that a brake could have adequate drum size, good airflow, and top-grade lining material and still be a miserable, mysterious headache. You can have the best drum brake in the world but if it is not set up correctly, you will not be able to use it hard. By being "set up" we mean all the factors that go into giving total and constant contact of the shoes to the drum whenever the brake is applied.

Let's go back to the adaptation of bigger drums for a minute. Whether you do this or stay with your stock drums, you should be absolutely sure your drum is going to be round and concentric when it goes back on your car. The machines that most brake shops use to turn drums will not provide the accuracy you need to insure smooth, constant contact with the shoes at high speeds. The best thing to do is bolt all your pieces together, making sure the drum is in the right axial location as far as the shoes are concerned. If you are using a wider or otherwise different drum, you will probably need a spacer ring to fit between the hub and the drum to give this desired axial location.

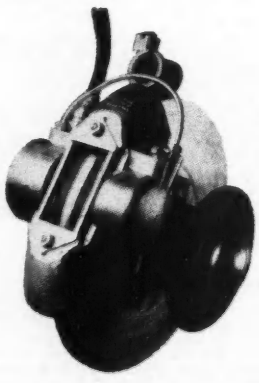
If you are sure the spacing is right, the studs stick far enough through the drum for the wheel and lug nuts, and everything is pulled up tight, take the entire assembly to a reputable machine shop. Ask them to take all the drums out to the minimum diameter necessary to bring the worst into concentricity with the hub bearing bores. Now you can be sure the drums will run true. When you get the assemblies back, be sure to chisel a mark in the hub, spacer and drum so that if you have to take it apart before you run, you can put it back together with the same indexing.

The drums returned from the machine shop will be a certain diameter. It is very unlikely that this diameter will match the curvature of shoes made to fit a stock drum. It is *most* important that the curvature of the lining match the inner diameter of the drum. Don't let anyone tell you, "Oh, don't worry about it. It'll wear itself in." If you have incomplete contact and do anything but take forever breaking it in, you are going to destroy the parts of the lining that are doing the work. You will also be getting erratic and uneven stopping. If only one edge of the lining is getting contact, you may overheat and distort that side of the drum. By all means, have the shoes accurately radiused in a reputable brake shop.

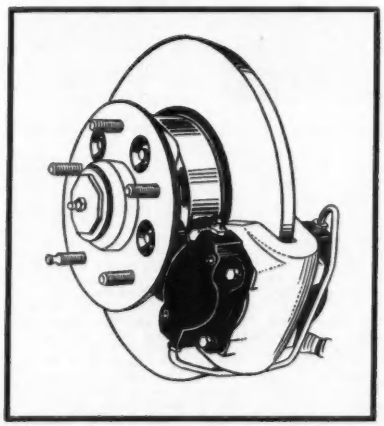
IF YOU ARE INSTALLING wider brakes than stock on your car, you will have to space the wheel cylinder out from the backing plate a distance equal to half the change in width of the shoes. In any case, check for any misalignment here and where the sides of the shoes rest against the pads on the backing plate. If for any reason the shoes do not rest flat, or the shoes and backing plate do not appear to be square to the spindle, or you have reason to think the backing plate has been bent, by all means replace it. The backing plate and shoes *must* be square to the spindle to achieve flat contact when the brakes are applied.

If you follow these suggestions you should have a highly effective set of brakes on your car. In order to take advantage of all your new brakes have to offer, you will have to use a lot of will power and concentration in breaking them in. Adjust them loosely at first; dragging new brakes is to be avoided at all costs. Use them often, but try to see to it that the applications are short. If you must make a long stop from high speed, try to "breathe" the brakes a couple of times. After a couple of hundred miles, pull your drums and look at the lining. They should be showing wear over their entire surface. If there are glazed spots, take a long strip of emery to the lining with a "shoe-shine" motion. At this point you should be all set.

It hardly seems necessary to mention that you should make sure the hydraulic part of your brake system is in perfect



Girling disc unit uses dual balanced hydraulic cylinders and slip-in type metal-backed bonded friction pads.



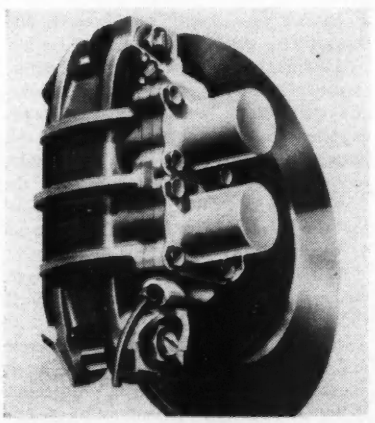
Dunlop disc brake, with rectangular friction blocks that can be replaced without dismantling, has dual pistons.

shape. In connection with this, though, if you find for any reason that pedal pressure is higher than you would like, and pedal travel is short, you can very easily find a new master cylinder one size smaller that will bolt right in place of the old one.

WE SHOULD NOT LEAVE any discussion of brakes without spending a moment on the fascinating possibilities of disc brakes. Jaguar is comparable in weight to the smaller American passenger cars, and a complete set of disc brakes for the Jag may be purchased for less than $200. If you are by nature a tinkerer, and have access to a small shop, the conversion of an American car to disc brakes would not be a hard job. Making sure the disc runs true after it is mounted on the hub is the only highly accurate job that would have to be done. The mount for the caliper has to be quite rigid, of course, but dimensionally the caliper location is no more critical than that of the shoes in the brakes we have been discussing; it must be square to the spindle. The higher line pressures normally required with a disc brake make it a natural for adaptation to cars with power brake systems.

In the first two articles of this series, we covered springing and handling. As has been stated in this article, a set of good brakes is an absolute must for confident and fast, safe driving, even in a car with good springing and handling. However, you will find that this works both ways—the springing and handling modifications will work wonders under extreme speed and adverse conditions to provide more reliable, faster and more stable stopping. Those big wheels and tires you put on for more cornering traction will give you the same amazing bite when stopping, and the stiff springs and shocks will keep the wheels glued to the road.

Give your car "more go" if you will—but make sure it has "more stop" to handle it. **/MT**



Dual-piston Lockheed caliper has internal hydraulic piping, quick-change friction pads bonded to a metal plate.

TAKE THE LEAD WITH LB POMADE



New LB Pomade tames hard-to-manage hair. No fuss. No muss. Treats hair with beneficial lanolin for healthy hair and scalp. Never sticky. Non-greasy. Try it.

2 oz. only 33¢

If you can't find LB in Midwest or East, ask your drug or food store manager, or send 25¢ for special postpaid travel size. LB LAB, 430, Glendale, Calif.



and for Crew Cuts, Butches, Ivy League & all short hair cuts

Insist on #1

LB BUTCH WAX



TUBE or JAR

Just Out! WORLD'S BIGGEST AUTO PARTS & ACCESSORIES CATALOG—FREE!



0-7

✓ 388 PAGES
✓ SAVE 50%
✓ 1960 RELEASES

Now — SAVE UP TO ONE-HALF on all your automotive needs! This giant new catalog includes thousands of accessories and parts for your car, truck, hot rod, custom car or station wagon — from early models to brand-new 1960 models, as well as sports and foreign cars. It features the latest Hollywood and Custom equipment not yet in stores—new high speed parts . . . in addition to hard-to-find exact replacement parts for old and current models alike!

Buy Direct by Mail from Whitney—and SAVE MONEY!

Our tremendous buying power and huge volume enable us to cut prices to rock bottom. You actually save up to 50% and more! We stock over 100,000 items, ready for immediate shipment—with new, improved facilities to speed up service on every order. Buy everything automotive from one source. Satisfaction guaranteed.

Mail coupon NOW!

100,000 ITEMS IN STOCK

Every order shipped the SAME DAY for speedy service, fast delivery.

THIS COUPON BRINGS *FREE* CATALOG

J. C. Whitney & Co. 1917 (0-7) Archer., Chicago 16, Ill.
Please send me your giant Catalog of Auto Parts & Accessories. I enclose 25c to cover part of mailing and handling cost (refunded on first order of $5 or more). Offer good in U. S. A. only.

Name_____

Address_____

City_____ Zone____ State_____

OVERDRIVE OWNERS

Unless you have a FLEXOVER unit in your car you don't know how convenient your overdrive transmission can be. Dash kickdown . . . and never feel it. Coast. Shift without the clutch at any speed. Great on crawling freeways and hills. Easy installation. $14.95 complete. Write to

FLEXOVER DIVISION
P.O. Box 4043, MT-7
DURHAM AIRCRAFT CO.
Los Angeles 54, Calif.



CORVETTE OWNERS

Add special touch to your Corvette and eliminate ugly black smudge on bumpers with J&J Custom Corvette exhaust tips. Postpaid, set..... $3.95

DEALER INQUIRIES INVITED

J&J MUFFLER SPECIALTIES
501 S. La Brea Avenue
Inglewood, California



VW FUEL GAGE

Excellent, reliable, all mechanical fuel gage system at ⅓ price of electric types. Easily read indicator clamps on driver's window defroster flange. Install transmitter in tank neck in minutes. Specify yr. VW sedan. Check or M.O. $6.00 ppd.

WEST COAST ENGINEERED PRODUCTS
P.O. Box 97 Goleta, California



Works in seconds!

Loosens Rusted Bolts
nuts, screws, "frozen" parts!

LIQUID WRENCH
SUPER-PENETRANT

The super-penetrating rust solvent that quickly loosens rust and corrosion.

AT ALL HARDWARE AND AUTO STORES

RADIATOR SPECIALTY COMPANY
CHARLOTTE, N. C.



A complete straight-thru dual exhaust system that completely replaces stock header and muffler. Drastically reduces back-pressure, improving mileage and puts real snap into the Corvair's performance. Fully equalized dual set-up just bolts onto existing connection points. Anyone can install—no welding or fabricating. Deeper, healthier sounding GLASS-PACK mufflers made of longest lasting heavy gauge seamless steel cases on market today!

$34.95 POSTPAID Complete with equalized head-pipe, gaskets, chrome-tipped mufflers with brackets welded in position.

CORVETTE TAIL PIPE REPLACEMENTS
$7.95 ea. ppd. Specify either left or right and year.

Send Check or M. O. We prepay freight. Calif. resid. add 4% tax. SATISFACTION GUARANTEED!

CYCLONE SALES
of California
Dept. 4, P.O. Box 485, La Canada, Calif.
DEALER INQUIRIES INVITED

Winningest Corvettes

continued from page 31

needed distinct improvements to go with the 240-hp, three-liter gullwing Mercedes coupe which boasted competition-proven brakes and had a good reputation for handling. Prior to the introduction of the Sebring-bred "Super Sport" the following summer, the best Thomas could do was hot rod his car in the limited manner allowed by regulations governing racing. Permissible were the then-rare Duntov cam, matching intake and exhaust ports to the head, altering the ignition and carburetor settings, and an open exhaust system. By using a chassis dynamometer to find optimum combinations he eventually extracted an additional 20 to 25 hp from the V8. Then with a baffled rear end to aid the too-often-dry ring and pinion, a shrewd selection of tires and pressures plus "ground round" brakes, the pursuit of the elusive Mercedes went on.

The Corvette-Mercedes vendetta on California road-race circuits attracted considerable attention to the big-bore production events which had lagged in interest since Mercedes swept Jaguar from the lists. The score was nearly even, too, until the first batch of Super Sport Corvettes appeared in July of '57. The stiffly suspended "Option Specials," as they were quickly dubbed by cynics, went the route with 283 cubic inches, fuel injection, dual-point distributor, Duntov cam, Positraction limited-slip differential, four-speed gearbox, wider drums and shoes, vented backing plates and fast steering.

This bag of good things should have been enough to satisfy the most demanding owner. But, having been weaned on gasoline and brought up with roadsters, dry lakes speed runs, midnight drag races and the like, the "group" ran their cars a couple of times in stock condition then sat down to play.

First off, racing rules permit enlarging the cylinder bores by .030-inch. This gains 5.21 cubic inches for the Chevy, and when you are drawing one rated hp per cube or better from an engine, the extra horses are real and earnest. Throwing the book on injectors away and modifying them to enrich the mixture enables the experimenter to add an unexpectedly large increase in power. Shortening distributor advance to 11 degrees (plus 18 degrees static), matching manifolds to head ports, thoroughly balancing the engine, fan pulley and generator armature, plus allowing an extra .001-inch in rod and main bearing clearances are other legal improvements. Most of the specialists such as Bill Thomas, Don Nicholson, Randy Smith, Roger Bursch, Jim Russell and Jim Viedenhoff, who tune several of the winningest cars, favor the Duntov cam over independent grinds but they add about 1/16-inch of extra shimming to the valve springs.

What has emerged is the present Southern California Corvette. Pumping out something like 240 hp at the rear wheels, officially timed at 144.82 mph through the traps at Riverside International Raceway (during a race) and unofficially at 151 (during practice), these cars are capable of lapping the 3.275-mile Riverside course within 11.5 seconds of the track record set by Chuck Daigh in a Reventlow Scarab . . . a difference in speed of only eight mph!

And when the Corvette contingent, in a surfeit of enthusiasm, enters the jousts against the big-bore *modified* machines, they don't fare too badly. Bob Bondurant, running in main events at Laguna Seca, took third overall on Saturday and fifth overall in the longer Sunday hassle. Ahead of the flying Chevy were a Porsche RSK (ex-Behra), a Ferrari Testa Rossa, the Huffaker Special and a Lister Jag. Back down the track were a lot of good racing sportscars.

Lest the impression be gained that it is "all car and no driver," the men who compete in this class are consistently high in skill: Dan Gurney (who surely needs no introduction) moved up from a Porsche for his first "big" ride in one of these Corvettes; Skip Hudson (now driving for Camoradi), Bob Bondurant (the current "King"), Andy Porterfield, Vince Mayell, Tony Settember, Bob Dickson and Dick Thorgrimson are drivers who can hold their own in good company anywhere.

How do these competitors feel about the Corvette? Bondurant says, "It is sensational if properly prepared." His background includes racing in Morgan, Triumph, Healey and Ferrari (he shared the Road America win with Sturgis) before going into the domestic product which allows for a valid comparison. "The new brakes make the most difference," Bondurant comments. "I was out-braking Sammy Weiss (Porsche RSK) at Laguna Seca going into Turn 9, and that's pretty good."

Bondurant also feels that the Corvette sheerly outhandles the Ferrari Berlinetta and the 300-SL roadster that so many expected to be a nemesis. "It's not all horsepower," Bob says. "We drive under those guys (the imports) because the Corvettes stick better. But, I will admit that the power you have on tap coming out of the turns helps handling immensely."

What do the Los Angeles Corvette pushers have to look forward to? Well, there is a new Ferrari 3.5-liter coupe with disc brakes that will soon be in action and, some of those Eastern cats will surely venture into the smog again. Altogether it looks like another interesting season out in the West where they may not grow 'em bigger any more, but they sure grow 'em *faster!* /MT

Porsche Super 90

continued from page 53

if the body is held by a corset. This is important for prolonged high-speed driving; one can drive the Super 90 for hours without tiring. The new steering wheel is ideally sized and positioned in relation to pedals and gearshift while instruments, notably the all-important tachometer, are in perfect view.

Power increase on the Super 90 has been attained by two Carrera carburetors (Solex 40 JJ-4), larger intake ports and valves, compression raised from 8.5 to 9 to 1, and a freer flowing yet quieter muffler. The intake valve stroke has been increased by changing the rocker arm ratio. Camshaft remains unchanged from the Super.

Starting is quick and easy from cold; a hot engine requires two or three accelerator strokes. There are no acceleration flat spots and the car pulls smoothly from 1500 to 6000 rpm in fourth gear without protest.

The four-speed all-synchro gearbox offers the most sensational fast shifting I know. It is no wonder that Ferrari and many others have adopted the Porsche ring synchronization.

Driving comfort is excellent. Torsion bars and telescopic shocks soak up every rough surface so that it is difficult to realize that this is a car with only an 81-inch wheelbase. Steering is not extremely light; it is easier to steer into a turn than in the turn itself. But steering is very direct and uneven road surfaces are not transmitted back into the wheel.

Porsche's drum brakes are without doubt the best on any production car today. Pedal pressure is light to moderate and there is no appreciable fade after a number of high-speed stops. Hands-off stopping is absolutely straight.

The tiny 1582cc (96.5 cubic-inch) engine moves the Super 90 from a standing start in very good fashion:

0-60 kph	**(37.2 mph)**	**6.6 secs.**
0-80	**49.6**	**9.4**
0-100	**62.0**	**13.6**
0-120	**74.4**	**19.0**
0-140	**86.8**	**27.0**
0-160	**99.2**	**36.0**
Standing kilometer (.62-mile)		**33.2 secs.**

The Super 90 is surprisingly economical. On the Autobahn we checked fuel consumption. At a steady 75 mph the car delivers 20.5 mpg. Stepping the speed up to 85 increased consumption to 17.4 mpg. This engine likes the best grade of gasoline available.

This is an exciting car, a man's car, outstanding in every way and a real adventure in motoring. In past years we wondered; now we know that the Porsche can be improved. The only question is where do they go from here? /MT

NOW AT YOUR NEWSSTAND! 75¢

ALL THE BLAZING THRILLS OF AMERICA'S NEW SPORT OF KINGS



KARTING HANDBOOK FOR THE LATEST IN:

Here comes the karting story in page after page of excitement on wheels. Get the complete run-down on every known kart in existence... all the how, what and whys of karting.

- PARTS AND SUPPLIERS
- KART MAINTENANCE
- SPECIALS ON THE FUTURE
- ENGINE POWER UNITS
- NEW COMPETITION EVENTS

Get it now at your newsstand or send direct for your copy with the coupon below.

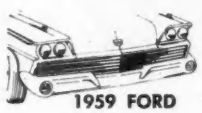
TREND BOOKS 5959 Hollywood Blvd., Los Angeles 28, California TB-195

Please send me_____copies of The KARTING HANDBOOK @ 85¢ each. (Covers mailing, postage, etc.)

NAME _____
(please print)

ADDRESS _____

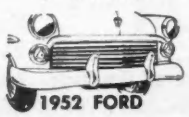
CITY _____ ZONE ____ STATE _____


1959 FORD


1958 FORD & Thunderbird


1957 FORD


55-56 FORD


1952 FORD

STAINLESS STEEL
TUBULAR TYPE
CUSTOM GRILLES

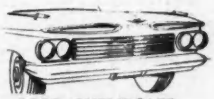
For 52-59 FORD
55-59 CHEVROLET
1958 THUNDERBIRD
Reg. $39.95 NOW..... $19.95 Each

Give the front end of your Ford, Chevrolet, or Thunderbird an entirely new, more beautiful look. Add sparkling, streamlined beauty. Grilles are custom tailored and contoured to harmonize with chrome trim, blend in perfectly with body lines. Tubes curve sharply back at each end to blend into grille opening. Grilles are complete with necessary mounting brackets, bolts and are already assembled. Easy to install—no alterations, cutting or welding necessary. Perfect fit guaranteed. GUARANTEED RUSTPROOF. Deluxe quality—heavier ¾" diameter, 18 gauge heavy stainless steel tubing. Tubes used in these grilles are not solid but 2/3 of a full tube—open in back. Brackets have welded studs that match original grille mounting holes. No alterations required. New parking light housing supplied when necessary for installing lights behind grille (except 55-56 Chevrolet & Ford).

J.C. WHITNEY & CO. USE THIS HANDY ORDER FORM
1917 (O-27) Archer Ave., Chicago 16, Ill.

I Enclose Check or Money Order for $19.95 plus $1.30 for shipping charges to cover payment in full (or 25% if C.O.D.). **Please do not send currency or stamps.** If C.O.D. order, enclose at least 25% deposit, pay balance plus shipping charges upon delivery.

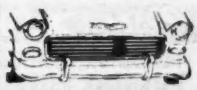
Name_____
Address_____
City_____ Zone____ State_____
My car is a_____ Year____
NOTE: Be sure to give Make and Model of car when ordering.


1959 CHEVROLET


1958 CHEVROLET


1957 CHEVROLET


1956 CHEVROLET


1955 CHEVROLET

The beautiful DELSWIFT

MIRROR AERIAL

NOTHING LIKE IT ON THE MARKET!



An automotive first! A beautifully-styled rearview mirror and a high-performance radio antenna — all in one quality unit! All external parts are heavily chrome plated . . . exclusive "Aeraxial" cable with aircell construction and polyethylene insulation assures maximum signal reception. Complete with 5 ft. 9 in. of cable and full instructions for mounting on either fender. Mirror is fully adjustable and is available in convex wide-angle or flat antiglare styles. Requires no adjustment for radio reception.

Delswift MIRROR-AERIAL, complete $16.95

Matching Mirror (without aerial) $6.50

If Your Dealer Does Not Yet Have His Stock, Please Write His Firm Name and Address on a Postcard and Mail to:

ENGINE IMPORTS, INC.
1140 N. Harbor Drive, San Diego 1, California
Trade Inquiries Invited
Some Attractive Territories Still Available

BEST SPORTS CAR YOU CAN OWN!



A 4-WHEEL DRIVE WITH WARN HUBS

Hi-ball on the highway in free-wheeling 2 w.d. with Warn Hubs on your 4 w.d.—no front end drag or whine, better gas mileage, easier steering. Save money, save road time. Switch in seconds into 4 w.d. when the going gets rough! Change to 2 or 4 w.d. automatically with Warn Lock-O-Matics, manually with Warn Locking Hubs. Guaranteed. Models for all makes 4 w.d.s to 1½ tons. At your dealer's or write: **WARN MFG. CO.**
Riverton Box 6064-F, Seattle 88, Wash.

WARN Selective Drive HUBS

KENTUCKY Autosportsmen know . . .
now we're letting ALL autosportsmen know.

THE FINEST ELECTRONIC BALANCING, ON THE LATEST, MOST ACCURATE EQUIPMENT, BY FACTORY TRAINED PERSONNEL IS JUST ONE OF THE MANY FEATURES THAT HAS MADE AUTO SPORT THE MIDWEST'S FINEST QUALITY CUSTOM EQUIPMENT AND SERVICE CENTER. A BROCHURE TELLING YOU MORE ABOUT OUR MANY FINE PRODUCTS AND SERVICES IS FREE FOR THE ASKING.

electronic balancing
Auto Sport Inc.
108 W. WYOMING AVE.
CINCINNATI 15 (LOCKLAND) OHIO
custom equipment : engine building

Custom AUTO RADIOS
TRANSISTOR POWERED NATIONALLY GUARANTEED $34.53
Custom fits most cars & trucks
Send a check now or write for more information
Custom Auto Radio, Inc. 653 Broadway (Route 1) Saugus, Massachusetts

MT ADVERTISERS' INDEX

Advertiser	Page
Adler Engineering	77
Almquist Engineering Company	77
Arnold-Dain Corp.	77
Auto Mechanics Institute	73
Autosport, Inc.	82
The Bendix Corporation	18
BMC	Cover 3
Ray Brown Automotive	76
Carskin	19
Champion Spark Plug Co.	14 & 15
Chrysler Corporation	8 & 9
Convert-O-Meter	82
E. Joseph Cossman Co.	77
Custom Auto Radio	82
Cyclone Sales of California	80
Do-Mor Brake Engineering	12
Engine Imports	21 & 82
Flexover Division—Durham Aircraft Co.	80
Foxcraft	21
The Gabriel Company	19
Gardner-Reynolds Tires, Inc.	20
Glide Control Corporation	6
Gunk Laboratories, Inc.	76
Harley Davidson Motor Co.	12
Hellwig Products Company	18
Honest Charley	73
J & J Muffler Specialties	72 & 80
James Auto Specialties	82
L.B. Hair Products	79
La Dawri Coachcraft	72
L & M Cigarettes	Cover 4
M & H Instrument Company	20
Mac's Supergloss	72
Mercedes-Benz	Cover 2
Micro-Lube Sales	13
Midway Welder Company	82
Mobil Oil Company	3
Namsco	10
Newhouse Automotive Indus.	76
Opel	5
Paser Manufacturing Company	11
Paxton Products	6
Plasticon, Inc.	74
Por-Del, Inc.	75
Radiator Specialty Co. (Liquid Wrench)	80
Radiator Specialty Co. (Motor Medic)	74
Raybestos	75
Rite Fit Company	76
Stewart Warner Corporation	10
Tulareloft	74
Valiant	7
Warn Mfg. Company	82
Warner Imports	76
West Coast Engineered Products	80
J. C. Whitney	71-79-81
Wynn Oil Company	4

ELECTRIC WELD - BRAZE & CUT
REPAIR MOST EVERYTHING MADE OF METAL
Home Appliances, Auto parts, Farm-garden equipment toys. Make and repair playground equipment, lawn chairs, tables, ornamental iron work, gates, wagons. Solder, heat, bend, & straighten with terrific heat from arc torch. Cut and weld up to ¼" steel plate. A million uses for home, auto, farm, inventors, factories, etc. Works from any home 110-volt plug-in. Complete with dark welders mask, arc torch, supply of carbon welding and brazing rods. Solder, flux, and complete Welding Instruction Book. Efficient — durable — 1 year guarantee. Weight 4 lbs.
SEND ONLY $3.00 (cash, ck., m.o.) and pay postman $9.95, plus COD postage on arrival or send $12.95 and we will send postpaid. Ideal gift for mechanically minded home owners, relatives, friends. Order now for early delivery. Available only from:
MIDWAY WELDER DAG-7 Kearney, Nebraska

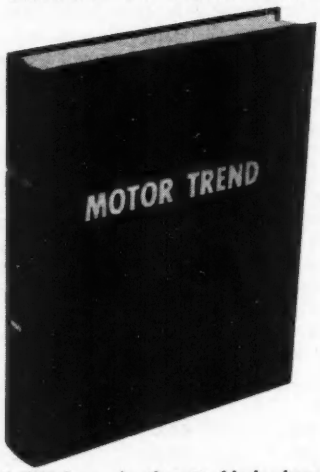
INSTANT GOODIES



AUTO TOP LIFT for Hardtops $9.95
FREE CATALOG
Everything for Sportscars, Corvettes, small T-Birds, and imported cars.
JAMES AUTO SPECIALTIES
Box 151M, Pasadena, Calif.

CONVERT-O-METER
Be first to calibrate your speedometer to international reading. Clock both kilometers and MPH—Fits all cars—Anyone can install. For complete kit send $1.00
CONVERT-O-METER 1517 Hampton, St. Louis 10, Mo.

HOW TO BUILD A VALUABLE MOTOR TREND LIBRARY OF YOUR OWN



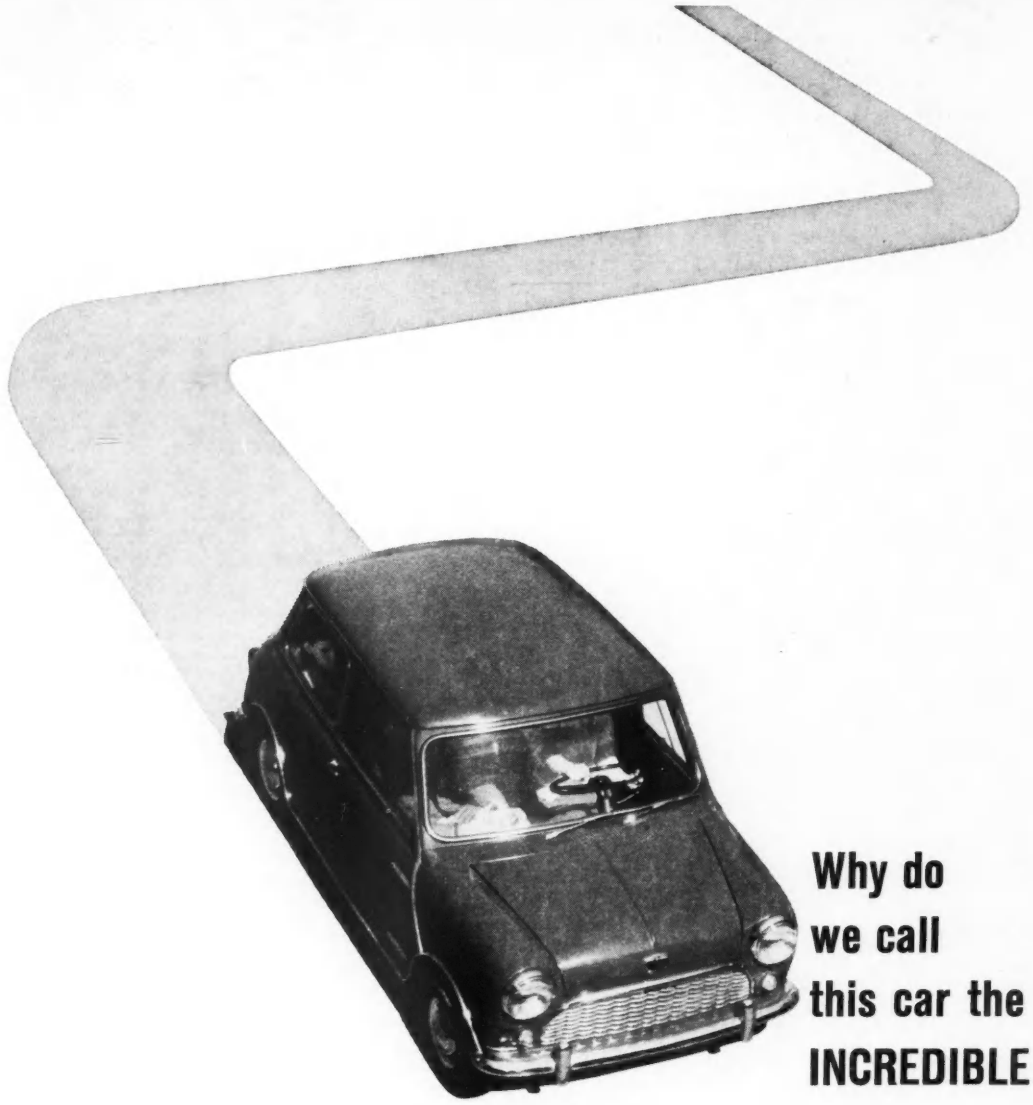
This handsome leatherette binder keeps your MT copies like new always. You'll soon have a handy reference library of fact and photographs for a lifetime of use and enjoyment.

ONLY $3.00
mail this coupon today!

MOTOR TREND
5959 Hollywood Blvd., L. A. 28, Calif.

Send me my MOTOR TREND BINDER; I enclose $3 in ☐ cash ☐ check ☐ money order. MT-760

NAME .....
(please print)
ADDRESS ..... ZONE .....
CITY ..... STATE .....



Why do we call this car the INCREDIBLE 850?

First, the '850' is *only* ten feet long. Yet it will hold four adults comfortably. In fact, the '850' has more room than many larger cars.

Its performance is—we almost said, "incredible". Here are the plain, simple, but amazing facts. Over 70 m.p.h. Can do 45 m.p.g. Whisks around corners like a sports car, rather than the handy, solid family car it is. Slips into spaces that are too small for "compact" cars. Frankly, you've got to drive it to believe it.

How did BMC do it? Just thought up a brand new idea in car design. That's all! The '850' is a front-wheel drive car, BUT with the engine mounted CROSSWISE. So you have all the rest of the car for yourself, passengers and luggage. And to make your ride smooth sailing, all wheels have independent rubber suspension.

No doubt about it, BMC, Britain's largest car manufacturer, did the incredible with the '850'. Comes in two models, both with full 12-month factory guarantee—the Austin 850 and the Morris 850—identical except for their grilles. Identical in price too—an incredible... **$1295***

Product of **THE BRITISH MOTOR CORPORATION, LTD.** Represented in the U. S. by HAMBRO AUTOMOTIVE CORPORATION, Dept. S-12, 27 W. 57th St., New York. Sold and serviced in North America by over 1000 dealers. **Literature and overseas delivery information on request.** **Suggested retail price at East Coast P. O. E. Slightly higher West Coast.*

BRITISH MOTOR CORPORATION BMC

builds **B**etter **M**otor **C**ars



MGA '1600' Austin A40 Austin Healey Sprite Morris '1000' 2-door Austin Healey '3000'

Stolen from Research Library
• PETERSEN PUBLISHING CO. •



©1960 Liggett & Myers Tobacco Co.

